Imagine COMMUNICATIONS

Installation and Operation Manual

Platinum™ VX

Frame and Modules

Version 1.1

July 2015

Publication Information

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Support Contact Information

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- Support Contacts (http://www.imaginecommunications.com/services/customer-care.aspx)
- eCustomer Portal (http://support.imaginecommunications.com)
- Academy Training (http://www.imaginecommunicationsacademy.com)

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Preface

Manual Information

Purpose

This manual details the features, installation, operation, maintenance, and specifications for the Platinum VX.

Audience

This manual is written for engineers, technicians, and operators responsible for installation, setup, maintenance, and/or operation of the Platinum VX.

Revision History

Version	Date	Comments
1.0	March 2015	First Release
1.0.1	April 2015	Minor corrections to content
2.0	July 2015	**Support for new Platinum VX SFP (PV-72SFP-FR-2)** Platinum VX SFP updates: The following sections were added/updated: • Updated Overview with reference to new 2 RU SFP frame See Platinum VX Overview (on page 15). • Detailed info on new 2 RU frame See 2 RU Frame (PV-48X48-FR-2/PV-72X72-FR-2/PV-72SFP-FR-2) (on page 26) • PV-72SFP main board See PV-72SFP Modules (2 RU SFP frame) (on page 94) • Frame specific details. See Frame Specific Details (on page 88) • Edits to Modules section See Input/Output Modules (on page 42) • Power Consumption details for 2 RU Frame with SFPs See Platinum VX Power Consumption (on page 80) • Parameters for supported SFPs See SFP Module Input Parameters (on page 101) and SFP Module Output Parameters (on page 103).

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Version	Date	Comments
		Support for new Platinum VX CQS (PV-CQ16-FR-1) Platinum VX CQS updates The following sections were added/updated: • Updated Overview with reference to new CQS module See Platinum VX Overview (on page 15). • CQS Features See Platinum VX CQS Features (on page 16) • Detailed info on new CQS frame. See 1 RU (PV-CQ16-FR-1) Clean and Quiet Switching (see "1 RU Frame (PV-CQ16-FR-1) with Clean and Quiet Switching" on page 25) • Clean and Quiet Switching Details See Clean and Quiet Switching (on page 74) • Genlock Specifications for PV-CQ16-FR1 See PV-CQ16-FR1 Genlock Specifications (on page 78) • PV-32x32 main board See PV-32x32 Modules (1 RU CQS frame) (see "PV-32x32 Modules (1 RU and 1 RU CQS frames)" on page 95) • CQS Modules See CQS Modules (see "PV-CQ16 Modules (CQS Modules)" on page 97) • CQS Parameters See CQS Parameters (on page 107) • CQS Module configuration See CQS Module Configuration (on page 126) Other minor edits to: • System LEDs (on page 81) • Sync Ports (on page 63)

Writing Conventions

This manual adheres to the following writing conventions.

Term or Convention	Description
Bold	Indicates dialog box, property sheet, field, button, check box, list box, combo box, menu, submenu, window, list, and selection names
Italics	Indicates email addresses, names of books and publications, and first instances of new terms and specialized words that need emphasis

Term or Convention	Description
CAPS	Indicates a specific key on the keyboard, such as ENTER, TAB, CTRL, ALT, DELETE
Code	Indicates variables or command-line entries, such as a DOS entry or something you type into a field.
>	Indicates the direction of navigation through a hierarchy of menus and windows
hyperlink	Indicates a jump to another location within the electronic document or elsewhere
Internet address	Indicates a jump to a Web site or URL

Obtaining Documents

Product support documents can be viewed or downloaded from our website. Alternatively, contact your Customer Service representative to request a document.

Unpacking/Shipping Information

Unpacking a Product

This product was carefully inspected, tested, and calibrated before shipment to ensure years of stable and trouble-free service.

1. Check equipment for any visible damage that may have occurred during transit.
2. Confirm that you have received all items listed on the packing list.
3. Contact your dealer if any item on the packing list is missing.
4. Contact the carrier if any item is damaged.
5. Remove all packaging material from the product and its associated components before you install the unit.

Keep at least one set of original packaging, in the event that you need to return a product for servicing.

Product Servicing

Except for firmware upgrades, modules are not designed for field servicing. All hardware upgrades, modifications, or repairs require you to return the modules to the Customer Service center.

Returning a Product

In the unlikely event that your product fails to operate properly, please contact Customer Service to obtain a Return Authorization (RA) number, and then send the unit back for servicing.

Keep at least one set of original packaging in the event that a product needs to be returned for service. If the original package is not available, you can supply your own packaging as long as it meets the following criteria:

- The packaging must be able to withstand the product's weight.
- The product must be held rigid within the packaging.
- There must be at least 2 in. (5 cm) of space between the product and the container.
- The corners of the product must be protected.

Ship products back to us for servicing prepaid and, if possible, in the original packaging material. If the product is still within the warranty period, we will return the product prepaid after servicing.

Safety

Carefully review all safety precautions to avoid injury and prevent damage to this product or any products connected to it. If this product is rack-mountable, it should be mounted in an appropriate rack using the rack-mounting positions and rear support guides provided. It is recommended that each frame be connected to a separate electrical circuit for protection against circuit overloading. If this product relies on forced air cooling, it is recommended that all obstructions to the air flow be removed prior to mounting the frame in the rack.

If this product has a provision for external earth grounding, it is recommended that the frame be grounded to earth via the protective earth ground on the rear panel.

IMPORTANT! Only qualified personnel should perform service procedures.

Safety Terms and Symbols in this Manual

⚠	**WARNING** **Statements identifying conditions or practices that may result in personal injury or loss of life. High voltage is present.**
⚠	**CAUTION** **Statements identifying conditions or practices that can result in damage to the equipment or other property.**

References

Professional Video Standards

SMPTE 259M

SMPTE Standard for Television — 10-Bit 4:2:2 Component and 4fsc Composite Digital Signals — Serial Digital Interface

SMPTE 292M

SMPTE Standard for Television — Bit-Serial Digital Interface for High Definition Television Systems

SMPTE 424M

SMPTE Standard for Television — 3G Signal/Data Serial Interface

SMPTE 344M

SMPTE Standard for Television — 540 Mb/s Serial Digital Interface

DVB-ASI

Digital Video Broadcasting Interfaces for CATV/SMATV Headends and Similar Professional Equipment

ITU-R BT601-4

For Serial Digital Video

EMC Compliance

EN 55022-2010

Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement

EN 61000-3-2:2006 / A2:2009; EN61000-3-3:2008
EN55024:2010

Information technology equipment - Immunity characteristics - Limits and methods of measurement

CISPR 22:2008

CISPR 24:2010

Per the provision of the Electromagnetic Compatibility Directive 2004/108/EC of December 15, 2004.

FCC Part 15 Subpart B:2004

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

ICES-003:2013

These devices do not exceed the Class “A” limits for radio noise emissions from digital apparatus as set out in the interference standard entitled “Digital Apparatus”

Safety Standards

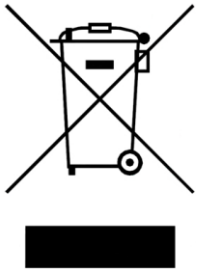
EN60950-1:2006 / A11:2009 / A1:2010 / A12:2011

Information technology equipment - Safety - Part 1: General requirements.

Waste from Electrical and Electronic Equipment (WEEE) Compliance

The European Union (EU) Directive 2012/19/EU on Waste from Electrical and Electronic Equipment (WEEE) deals with the collection, treatment, recovery, and recycling of electrical and electronic waste products. The objective of the WEEE Directive is to assign the responsibility for the disposal of associated hazardous waste to either the producers or users of these products. As of July 4, 2012, the producers or users of these products were required to recycle electrical and electronic equipment at end of its useful life, and may not dispose of the equipment in landfills or by using other unapproved methods. (Some EU member states may have different deadlines.)

In accordance with this EU Directive, companies selling electric or electronic devices in the EU will affix labels indicating that such products must be properly recycled. (See our website for more information.) Contact your local sales representative for information on returning these products for recycling. Equipment that complies with the EU directive will be marked with a WEEE-compliant emblem.



Restriction on Hazardous Substances (RoHS) Compliance

Directive 2011/65/EU—commonly known as the European Union (EU) Restriction on Hazardous Substances (RoHS)—sets limits on the use of certain substances found in electrical and electronic equipment. The intent of this legislation is to reduce the amount of hazardous chemicals that may leach out of landfill sites or otherwise contaminate the environment during end-of-life recycling. The Directive, which took effect on June 8, 2011, refers to the following hazardous substances:

- Lead (Pb)

- Mercury (Hg)
- Cadmium (Cd)
- Hexavalent Chromium (Cr-V1)
- Polybrominated Biphenyls (PBB)
- Polybrominated Diphenyl Ethers (PBDE)

According to this EU Directive, all products sold in the European Union will be fully RoHS-compliant and "lead-free." (See our website for more information.) Spare parts supplied for the repair and upgrade of equipment sold before July 1, 2006 are exempt from the legislation. Equipment that complies with the EU directive will be marked with a RoHS-compliant emblem.

Platinum VX Overview

Imagine Communications' Platinum VX™ small to mid size router lineup is a dense and powerful series of HD-SDI routers. It incorporates the latest equalization and reclocker technologies to deliver unparalleled signal quality and reliability. The system supports both electrical and optical interfaces utilizing HD-BNC and SFP (small form-factor pluggable) modules respectively providing unprecedented versatility in system design and implementation. SFP modules currently support HDBNC-SDI, optical, A/D conversion, and HDMI.

The Platinum VX supports video in matrix sizes from **16 x 16 up to 288 x 288** in four different frame sizes:

Frame Size	Electrical Inputs/Outputs	SFP Inputs/Outputs	Total Inputs/Outputs available
1 RU	16x16	16x16	32x32
1 RU CQS	18x18	12x12	30x30
2 RU			
Config 1	48 x 48	-	48 x 48
Config 2	72 x 72	-	72 x 72
Config 3	48 x 48	24 x 24	72 x 72
4 RU	144 x 144		up to 144 x 144
8 RU	288 x 288		up to 288 x 288

The 1 RU variant of the Platinum VX offers 16 inputs and 16 outputs (HD-BNC) with the option to use SFPs for an additional (optical or electrical) 16 inputs and 16 outputs. A 1 RU frame with a Clean and Quiet module is also available. See 1 RU Frame (PV-16X16-FR-1) (on page 24) and 1 RU Frame (PV-CQ16-FR-1) with Clean and Quiet Switching (on page 25).

The 2 RU variant can be ordered in a 48 x 48 HD-BNC configuration, or a 72 x 72 HD-BNC configuration, or a 72 x 72 mixed configuration (24 x24 SFP and 48 x 48 HD-BNC). See 2 RU Frame (PV-48X48-FR-2/PV-72X72-FR-2/PV-72SFP-FR-2) (on page 26).

4 and 8 RU variants of the Platinum VX offer Coax/Electrical (HD-BNC) and SFP back module variants, with 24 inputs and 24 outputs per module. Redundant Video/Crosspoint Modules are available for the 4 and 8 RU variants. Redundant Power is available for all variants. See 4 RU Frame (PV-FR-4) (on page 28) and 8 RU Frame (PV-FR-8) (on page 30).

With four different physical sizes the Platinum VX can be used for practically any application. The 1 RU and 2 RU sizes are applicable for space restricted small matrix requirements. The 4 RU and 8 RU versions are recommended when there is a requirement for a larger matrix, or scope for video matrix growth in the future.

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Platinum VX Features

- **Density**
  Using HD-BNC and SFP connectivity, Platinum VX has the greatest density per rack unit of any SDI video routing system on the market.
- **Wide Range of Supported Signal Types**
  - SD-SDI & HD-SDI to 1080p (3 Gb/s)
  - ASI, SMPTE 310, SMPTE 305, etc.
  - Legacy analog video supported via conversion to/from SD-SDI on SFP I/O
- **Control Panels**
  The full line of Magellan™ control surfaces can be used with Platinum VX. Multiple panels can be used on a single frame as needed for the individual routing needs of the customer. Magellan control panels are ultra thin, less than 2 inches in depth. This allows them to be placed anywhere that is convenient for the operational need of the router. They can be mounted in the rack with the Platinum VX or placed in a remote location. Manual control of the Platinum VX router requires at least one Magellan control surface.
- **Control System**
  Platinum VX has a web interface for configuration, similar to the Platinum IP3™ Controller software. All setup, configuration, and database functions are accomplished through the web interface housed within each of the four frames.
- **Automation Support**
  The Platinum VX supports XY serial control from automation systems, eliminating the need for new drivers. Platinum VX also supports control using LRC and Virtual XY protocol over IP (Ethernet) which has been implemented by many third-party manufacturers.
- **Versatility**
  With four frame sizes, Platinum VX installations can be tailored to the perfect size to support the routing needs of today or expansion capability for the future. 1,4, and 8 RU frames have the capability to utilize SFP modules to enhance the performance characteristics of the frame. SFP cages can be used for optical, additional HD-BNCs, analog conversion, and HDMI I/O.
- **Full Redundancy Capabilities**
  All four frame sizes of Platinum VX support redundant power capability. The 4 RU and 8 RU systems also support optional redundancy for the Crosspoint/Controller within the frame.

Platinum VX CQS Features

- Clean and Quiet Switcher in a 1 RU chassis
- Frame sync or line sync operation
- User-selectable transition modes and duration
- Signal presence monitoring
- Error monitoring (EDH and CRC)
- Freeze and Black monitoring

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See Platinum VX CQS Main Board Features (on page 17) and Platinum VX CQS Sub Board Features (on page 17).

Platinum VX CQS Main Board Features

- 16 HD-BNC SD/HD/3G SDI inputs
- 6 SFP cages for dual SFP inputs
- 2 SFP cages for SFP relay bypass inputs and outputs
- One RS-232/422/485 Serial com port for legacy XY protocol over serial support
- 16 HD-BNC SD/HD/3G SDI outputs
- 6 SFP cages for dual SFP outputs

Platinum VX CQS Sub Board Features

- Four auto-sensing SD/HD/3G SDI inputs with Auto ASI bypass
- Signal presence monitoring
- Error monitoring (EDH, CRC)
- Freeze and Black monitoring
- Two processed SD/HD/3G SDI outputs with processing bypass option for each output

Audio and Video Processing

- Four video frame synchronizers with H-Phase, V-Phase and Frame delay controls
- Four line synchronizers for minimum latency operation
- Four configurable video mixers, with arbitrary transition timing of up to four seconds for the following transition modes: Cut, X-Fade, V-Fade, Cut-Fade and Fade-Cut
- Four independent simple test signal generators (TSG)
- Four 16 channel audio de-embedders
- 64 channels of audio proc amp capability for Mute, Gain, Swap/Copy, Invert, and Sum
- Four Audio Mixers, supporting the following transition modes with arbitrary transition timing (up to 4 seconds)
  - Cut
  - X-Fade
  - V-Fade
  - Cut-Fade
  - Fade-Cut
- Four 16 channel audio embedders

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Platinum VX Installation

Prior to installing your system, ensure that certain environmental and electrical conditions are met.

Electrical Requirements

The Platinum VX power supplies have a universal input of 100-240 VAC at 47 to 63 Hz (nominal), 75 W. There is no voltage selector switch. Each frame has space for two power supplies; however, a single power supply can meet the requirements of a fully-loaded frame.

Environmental Requirements

Platinum VX units are cooled by forced air drawn in from the front, and exhausted through the rear. There must be free passage for air flow at the front and back of each unit to allow for adequate ventilation. Take care to select a dry, well-ventilated location with a minimum of dust.

Platinum VX units are designed for mounting in a standard 19-in. (48-cm) rack using front-mounting ears and rear support brackets, occupying a vertical space of 1.75 in (1 RU), 3.5 in (2 RU), 7 in (4 RU), or 14 in (8 RU).

When installing a Platinum VX in a rack, ensure that there is adequate space behind the mounting ears and clearance for the rear connecting cables. Allow about 10 inches (25 cm) of slack in the rear connecting cables for frame access and maintenance.

After unpacking the frame, and before installing into a console or rack, allow at least 30 minutes for temperatures to equalize and to eliminate any condensation that may have developed. Platinum VX frames require an ambient temperature of between 32°F and 104°F (0°C to 40°C) with relative humidity of 10% to 90% non-condensing).

Accessories Box

Table 1: Accessories Box shipped with Platinum VX frames

1 RU Frame	2 RU Frame	4 RU Frame	8 RU Frame
Power Cords	Power Cords	Power Cords	Power Cords
Power Supplies	Power Supplies	Extractor Handle	Extractor Handle
Rack Mounting Kit See Rack Mounting Kit for 1 and 2 RU Frames (on page 19)		Rack Mounting Kit See Rack Mounting Kit for 4 and 8 RU Frames (on page 19)	

Table 2: Rack Mounting Kit for 1 and 2 RU Frames

Item	Part Number	Quantity
Tie bar screws	6-32X3/8 PH_Q	2 pcs
Rear support arms	164-000306Q00	2 pcs
Cable tie bar	164-000305Q00	1 pc

Table 3: Rack Mounting Kit for 4 and 8 RU Frames

Item	Part Number	Quantity
Bracket screws	4-40X1/4 PH_Q	2 pcs
Brackets	FR-905-M7	2 pcs
Rear Support Bar	164-100083Q00	2 pcs

Rack Mounting for 1/2 RU Frames

Although the pre-installed frame-mounting ears provide the main support for the Platinum VX within a rack, you must install arms, brackets, and a cable relief bar at the rear of the unit to support the weight of cabling and frame stacking.

Note: The frame mounting ears and the rack support brackets are reversible. You can install them with the ears at the front and support brackets at the rear, or with the ears at the rear and the support brackets at the front.

The following procedure describes how to install the rack supports.

1. Locate the accessories box. Note that brackets are pre-attached to the frame, and these are what the arms slide into.

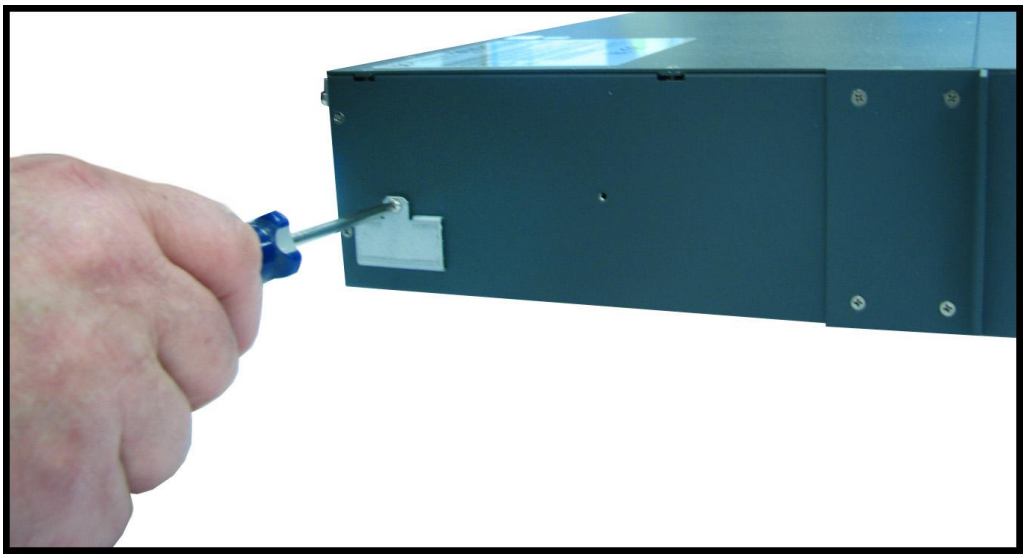


Figure 1: Pre-installed brackets on frame

2. Attach the cable tie bar between the two support arms using the screws that are provided. You can secure the cable tie bar through any of the screw holes on the arm.

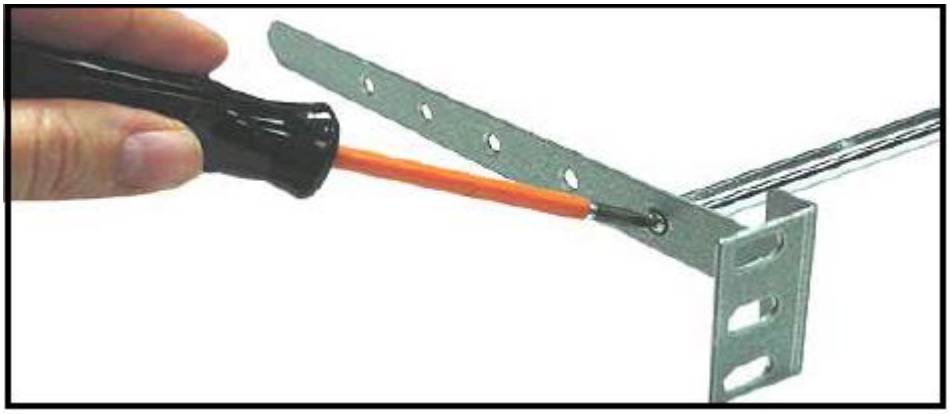


Figure 2: Attaching the Cable Tie Bar

3. Push the Platinum VX into the front of the rack, and attach the frame's front-mounting ears to the rack using the appropriate screws (not provided).
4. Slide the two arms into their slots from the back of the frame and attach the arms to the back of the rack.

Figure 3: Installed Support Arms and Cable Tie Bar

Rack Mounting for 4/8 RU Frames

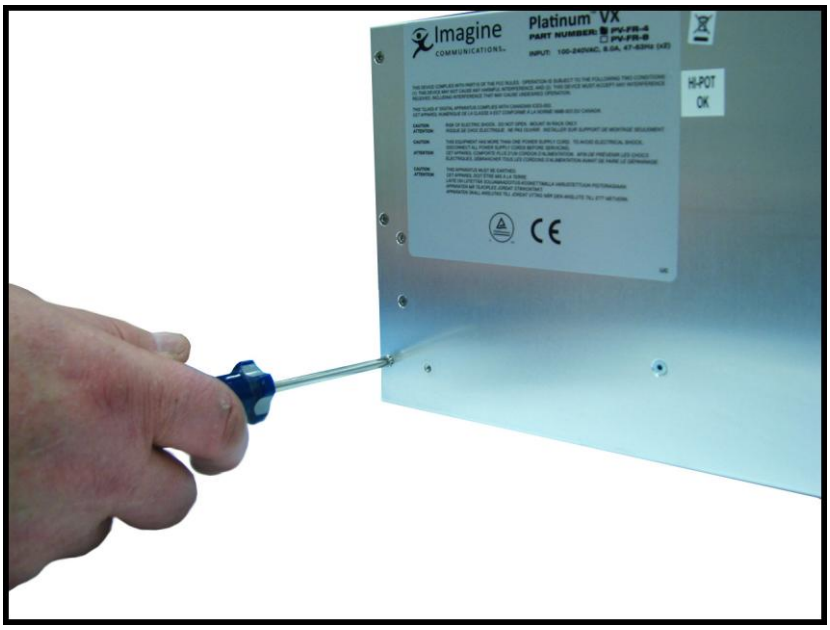
Although the front mounting ears provide the main support for the frame within a rack, you must install additional brackets at the rear of the unit to support the weight of cabling and frame stacking. Attach the brackets to the frame using only the screws that are provided.

Note: The frame mounting ears and the rack support brackets are reversible. You can install them with the ears at the front and support brackets at the rear, or with the ears at the rear and the support brackets at the front.

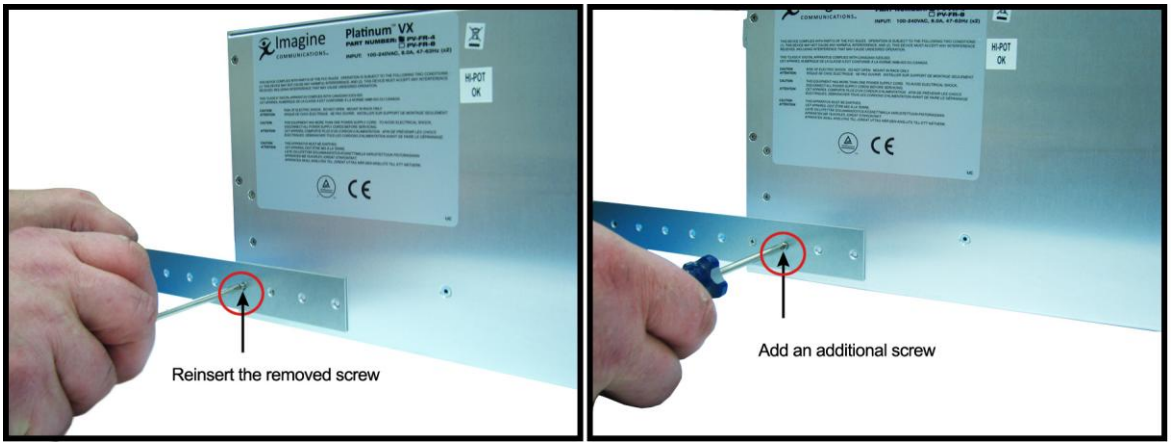
1. Locate two tongue-shaped frame support brackets and two slotted rack support brackets in the Accessories Box.

Figure 4: Support Brackets

2. Remove the bottom screw from the back of the frame.



3. Attach the tongue-shaped frame support bracket to the side of the frame by reinserting the screw removed in the previous step and adding an additional screw next to it. You can position the frame support bracket as required, depending on the depth of your rack.



Caution: Do not use screws longer than those provided for the rear support brackets. Five 4-40 x1/4-inch flat-head screws are provided for this purpose. Longer screws could cause internal damage.

4. Repeat these steps to add the frame support bracket to the other side of the frame.
5. Attach the two slotted rack support brackets at the rear of the rack, with the slots facing inside.

6. Push the frame into the front of the rack, ensuring that the frame support brackets slide into the slotted rack supports.
7. Attach the front of the frame to the rack, using the appropriate rack screws.
8. Make all necessary electrical and optical connections to the back of the frame.

Network Settings

When shipped, the Platinum VX is configured with a default IP address, subnet mask, and default gateway. If you intend to control the unit remotely, or connect it to a network hub/ switch along with other Platinum VX units, you will need to reconfigure the IP with unique network settings. Local control (with a direct Ethernet crossover connection to a PC) does not require any IP configuration.

- To connect a Platinum VX directly to a PC (no network connection), connect one end of a crossover Ethernet cable to the Control Ethernet RJ-45 port on the back of the frame, and the other end to the PC Ethernet port.
- To establish a network connection, connect a straight-through 10/100Base-T Ethernet cable between the Platinum VX Control Ethernet port and the network hub/switch.

Setting IP and Subnet Mask Addresses

To allow devices to communicate on a network, you need to set all Platinum VX devices to the same subnet (network location). When shipped, Platinum VX units are configured with the same default IP

(device identifier) and subnet addresses. These addresses need to be changed so that each unit is uniquely identified and the network location of all units is accurately reflected.

The default (factory-configured) ENET 1 IP address for every Platinum VX unit is **192.168.100.250.** For a class C network, you must change the first three items in the octet to identify the location (address) of the unit on your network, and also change the last item in the octet to uniquely identify the device from other Platinum VX units. The default subnet mask address for every Platinum VX is 255.255.255.0.

See System and Network Requirements (on page 82).

Platinum VX Frame

The following variants are available:

- 1 RU Frame (PV-16X16-FR-1) (on page 24)
- 1 RU Frame (PV-CQ16-FR-1) with Clean and Quiet Switching (on page 25)
- 2 RU Frame (PV-48X48-FR-2/PV-72X72-FR-2/PV-72SFP-FR-2) (on page 26)
- 4 RU Frame (PV-FR-4) (on page 28)
- 8 RU Frame (PV-FR-8) (on page 30)

1 RU Frame (PV-16X16-FR-1)

The 1 RU Platinum VX frame is orderable as a complete unit. It offers 16 HD-BNC inputs and 16 outputs via built in connectors on the rear panel.

In addition, there are 16 SFP (small form-factor pluggable) cages on the frame, providing an additional 16 inputs and 16 outputs. You add the hot-pluggable SFP modules to create versatile solutions that fit the specific application by ordering individual SFPs and sliding them into the cages built into the frame. All the supported SFP modules are dual port except for the HDMI SFP module. For supported SFP modules and specifications, see Supported SFP Types (see "Supported SFP Specifications" on page 34).

Also see Fan Speed for 1 RU Frames (on page 47).

Table 4: 1 RU Platinum VX Frame Modules and Matrix

Part Number	Frame Type	Number of HD-BNC Inputs/Outputs	Number of SFP cages for additional inputs/outputs	Total Matrix Size
PV-16X16-FR-1	1 RU	16x16	16x16	16x16 (electrical only) 32x32 (electrical and SFP)

Figure 5: 1 RU Platinum VX Frame - Front View

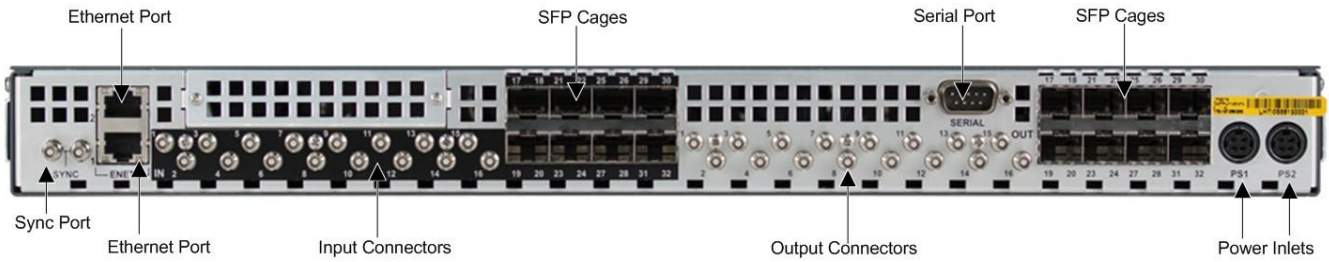


Figure 6: 1 RU Platinum VX - Rear View

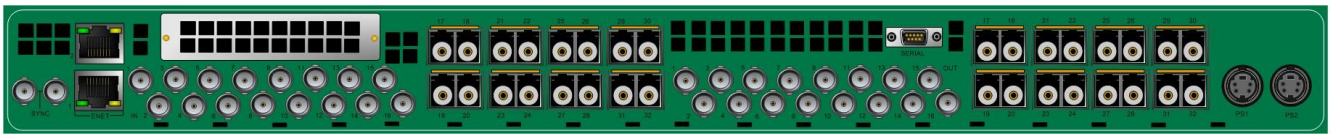


Figure 7: 1 RU Platinum VX - Rear View Connectors

For more information on the PV-16X16-FR-1, see:

- PV-16X16-FR-1 User Interface Platinum VX Dashboard (on page 84)
- PV-16X16-FR-1 Frame Contents Frame Specific Details (on page 88)
- Main module in the frame PV-32x32 Modules (see "PV-32x32 Modules (1 RU and 1 RU CQS frames)" on page 95)

1 RU Frame (PV-CQ16-FR-1) with Clean and Quiet Switching

The **PV-CQ16-FR-1** is a clean and quiet version of the 1 RU Platinum VX, consisting of a 1 RU frame (PV-FR-1), and an additional Clean and Quiet Switching (CQS) sub board (See PV-CQ16 Modules (CQS Modules) (on page 97))

Table 5: 1 RU PV-CQ16-FR-1 Platinum VX Frame Modules and Matrix

Part Number	Frame Type	HD-BNC Inputs/Outputs	SFP Inputs/outputs	Total Matrix Size
PV-CQ16-FR-1	1 RU	18x18	12x12	18x18 (electrical only) 30x30 (electrical and SFP)

Frame Temperature

There are four fans on the PV-CQ16-FR-1 frame. The PV-CQ16 Modules (CQS Modules) (on page 97) contain temperature sensors and report temperatures by Zone (Zone 1/2/3) in Celsius. If any of the sensors report temperature over the predefined limit, an Alarm is triggered (Module Temperature is too high) to alert the user who can then take appropriate actions such as powering off the frame to prevent overheating.

For more details, see Clean and Quiet Switching (on page 74).

2 RU Frame (PV-48X48-FR-2/PV-72X72-FR-2/PV-72SFP-FR-2)

The Platinum VX 2 RU frame is available in 3 different configurations:

- **Config 1 (PV-48X48-FR-2)**- Pre-fitted, offering a total of 48 electrical inputs and 48 outputs.
- **Config 2 (PV-72X72-FR-2)** - Pre-fitted, offering a total of 72 electrical inputs and 72 outputs.
- **Config 3 (PV-72SFP-FR-2)** - Pre-fitted, offering 24 SFP inputs and 24 SFP outputs, plus 48 electrical inputs and 48 outputs.

Note: The 2 RU frame is factory fitted with 48 x 48 HD-BNC connectors, 72 x 72 HD-BNC connectors, or mixed SFP (24 x 24) and HD-BNC (48 x 48). It is not user configurable. If future expansion may be required, consider the 4 RU or 8 RU variants.

Table 6: 2 RU Platinum VX Frame Modules and Matrix

Part Number	Frame Type	Number of HD-BNC Inputs/Outputs	Number of SFP Inputs/Outputs	Total Matrix Size
PV-48X48-FR-2	2 RU *Config 1*	48x48 See BNC Module Input Parameters (on page 99) and BNC Module Output Parameters (on page 100).	-	48x48
PV-72X72-FR-2	2 RU *Config 2*	72x72 See BNC Module Input Parameters (on page 99) and BNC Module Output Parameters (on page 100).	-	72x72
PV-72SFP-FR-2	2 RU *Config 3*	48x48 See PV-72SFP Modules (2 RU SFP frame) (on page 94)	24x24	72x72

Figure 8: 2 RU Platinum VX - Front View

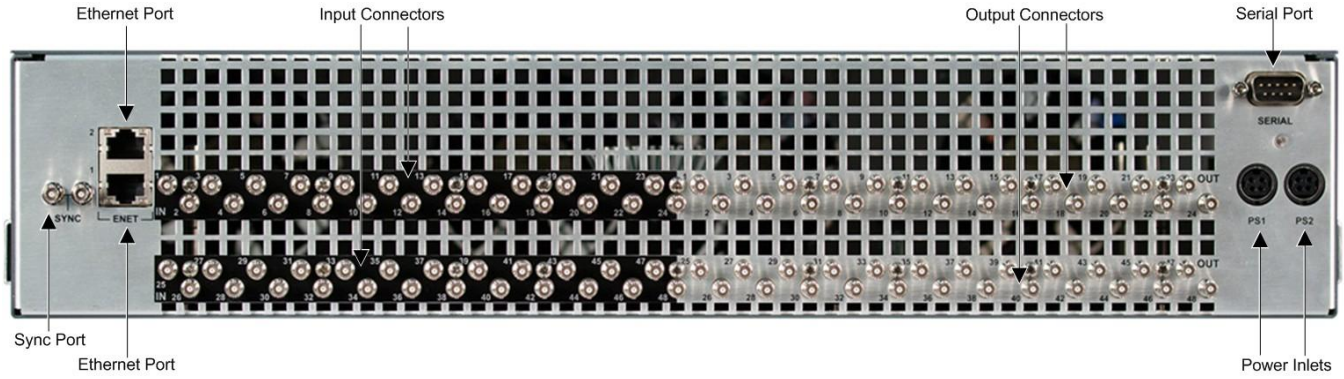


Figure 9: 2 RU Platinum VX - Rear View (48x48 configuration)

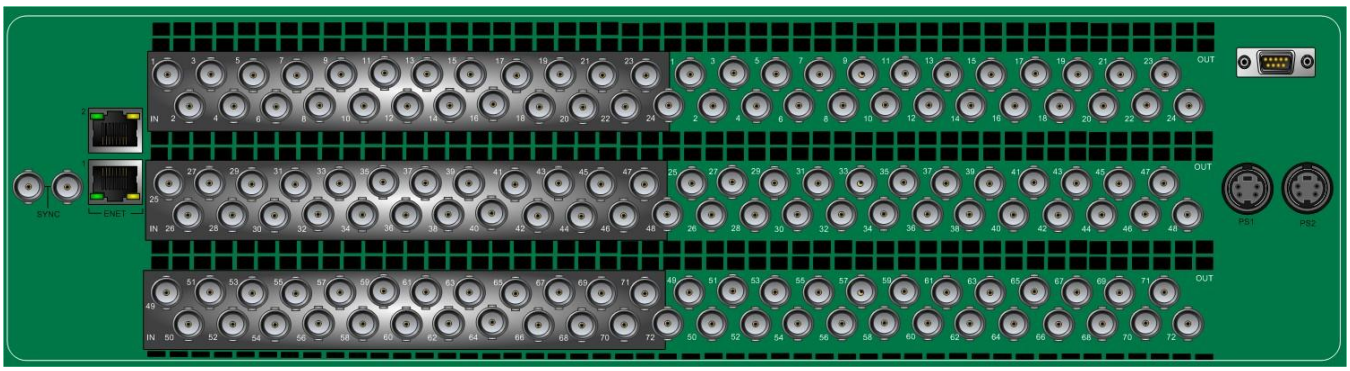


Figure 10: 2 RU Platinum VX - Rear View Connectors (72x72 configuration)

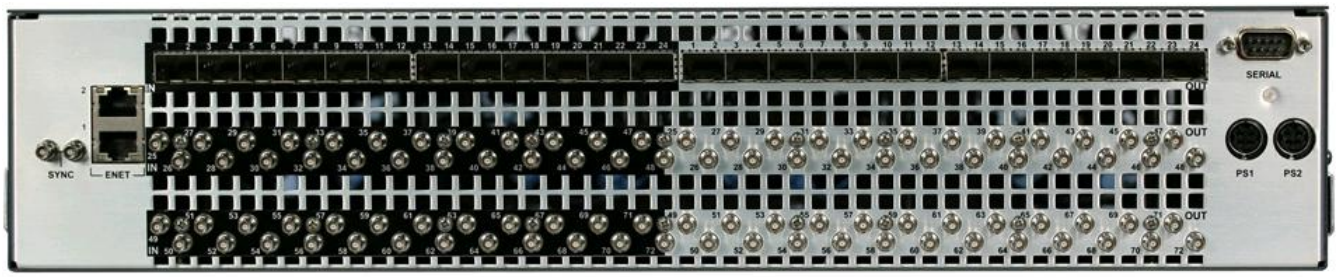


Figure 11: 2 RU Platinum VX - Rear View (24x24 SFP + 48x46 HD-BNC configuration)

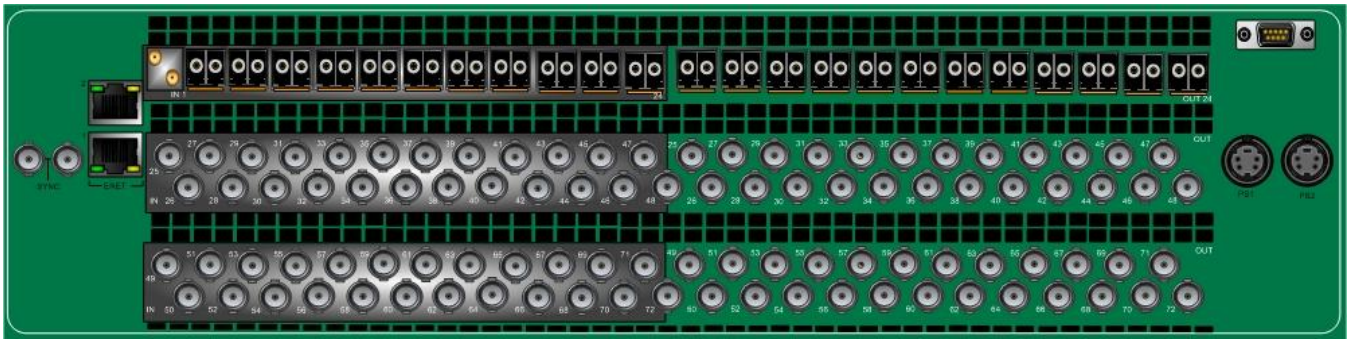


Figure 12: 2 RU Platinum VX with SFP - Rear View Connectors (24x24 SFP plus 48x48 HD-BNC configuration)

For more information on PV-48X48-FR-2/PV-72X72-FR-2/PV-72SFP-FR-2, see:

- 2 RU Frame User Interface Platinum VX Dashboard (on page 84)
- 2 RU Frame Contents Frame Specific Details (on page 88)
- Spec for Supported SFPs in a PV-72SFP-FR-2 Frame Supported SFP Specifications (on page 34)
- Parameters IO-72x72/IO-48x48 (2 RU Frames) (on page 92) and PV-72SFP Modules (2 RU SFP frame) (on page 94)

4 RU Frame (PV-FR-4)

The Platinum VX 4 RU frame is configurable with up to 6 back modules offering a total of 144 inputs and 144 outputs. Each Input/Output module supports 24x24 HD-BNC or SFP connectivity. For each of the 6 input/output modules, you can choose SFP or HD-BNC variants.

Table 7: 4 RU Platinum VX Frame Modules and Matrix

Part Number	Frame Type	No of Modules	Number of HD-BNC Inputs/Outputs	Number of SFP Inputs/Outputs	Total Matrix Size
PV-FR-4	4 RU	6	144x144 See BNC Module Input Parameters (on page 99) and BNC Module Output Parameters (on page 100) See SFP Module Input Parameters (on page 101) and SFP Module Output Parameters (on page 103).		144x144

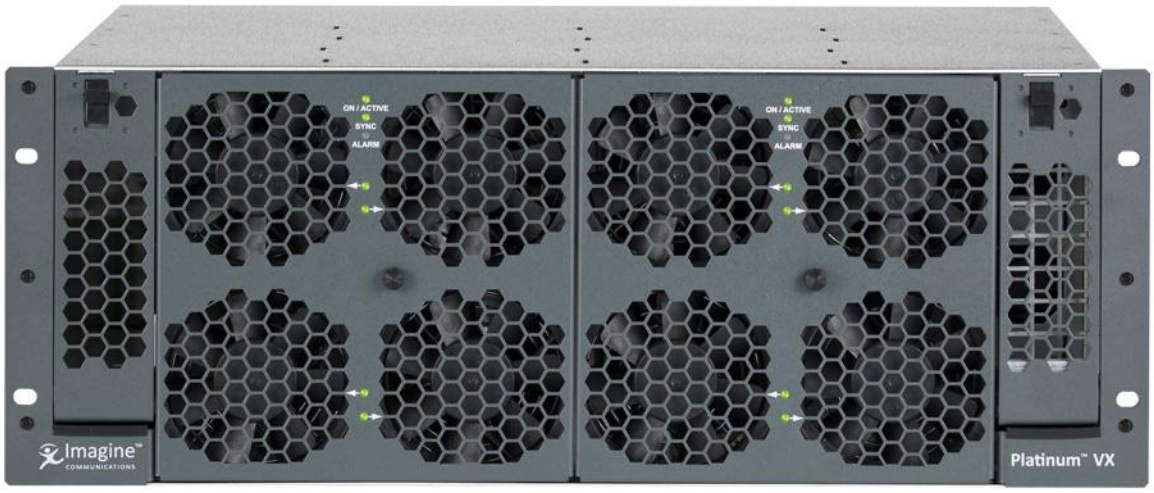


Figure 13: 4 RU Platinum VX- Front View

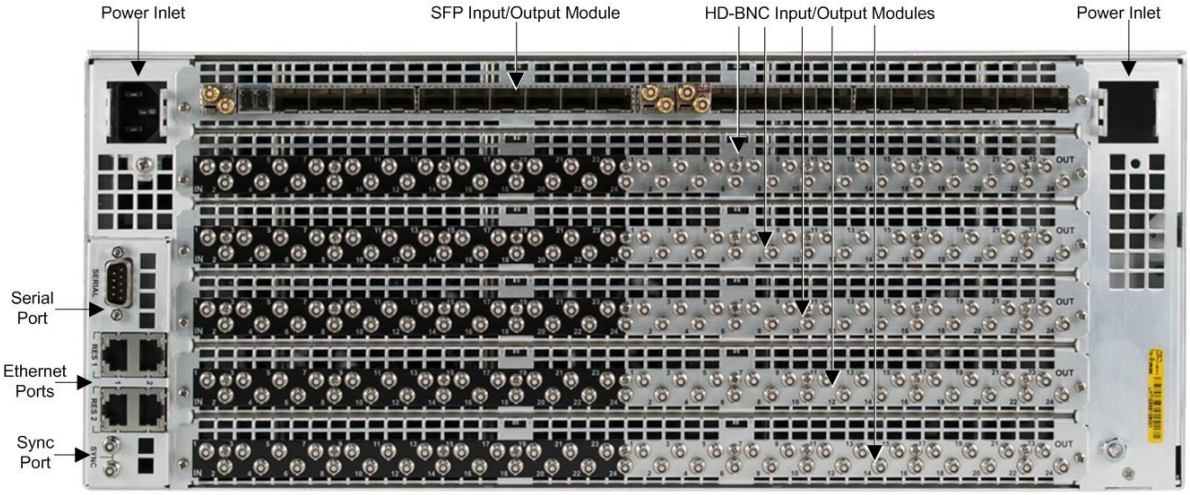


Figure 14: 4 RU Platinum VX - Rear View (showing 1 SFP and 5 HD-BNC modules)

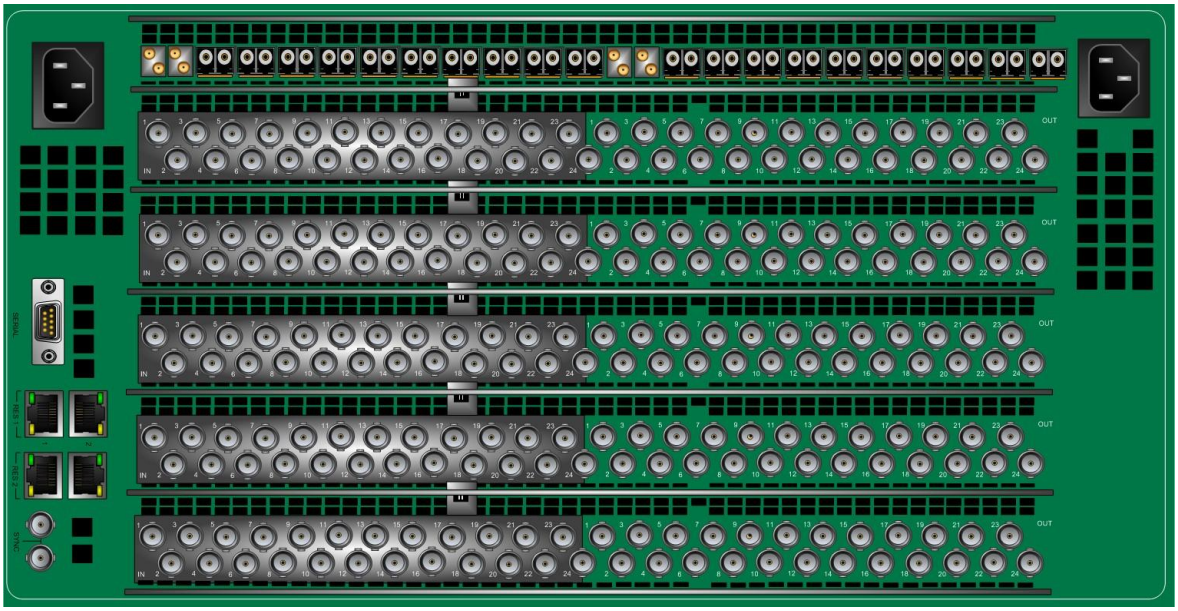


Figure 15: 4 RU Platinum VX - Rear View Connectors (showing 1 SFP and 5 HD-BNC modules)

For more information on PV-FR-4, see:

- 4/8 RU Frame User Interface Platinum VX Dashboard (on page 84)
- 4/8 RU Frame Contents Frame Specific Details (on page 88)
- Spec for Supported SFPs Supported SFP Specifications (on page 34)
- Parameters Module Parameters (on page 99)

8 RU Frame (PV-FR-8)

The Platinum VX 8 RU frame is configurable with up to 12 back modules offering a total of 288 inputs and 288 outputs. Each Input/Output module supports 24x24 HD-BNC or SFP connectivity. For each of the 12 input/output modules, you can choose SFP or HD-BNC variants.

Table 8: 8 RU Platinum VX Frame Modules and Matrix

Part Number	Frame Type	No of Modules	Number of HD-BNC Inputs/Outputs	Number of SFP Inputs/Outputs	Total Matrix Size
PV-FR-8	8 RU	12	288x288 See BNC Module Input Parameters (on page 99) and BNC Module Output Parameters (on page 100) See SFP Module Input Parameters (on page 101) and SFP Module Output Parameters (on page 103).		288x288

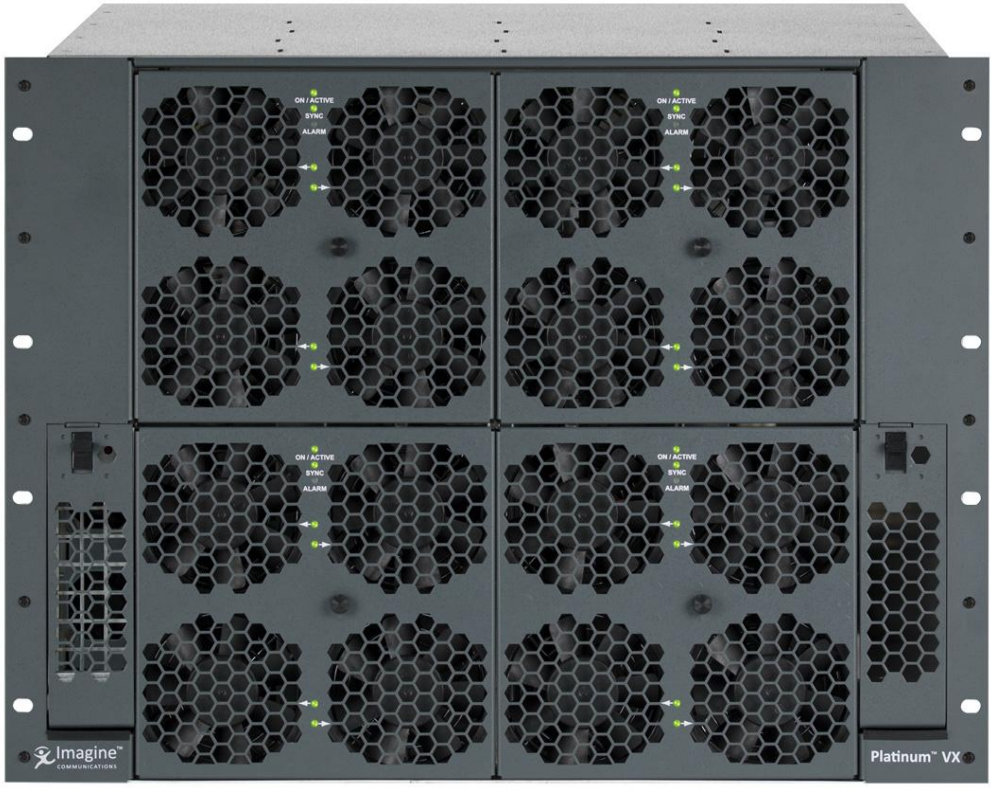


Figure 16: Platinum VX 8 RU - Front View

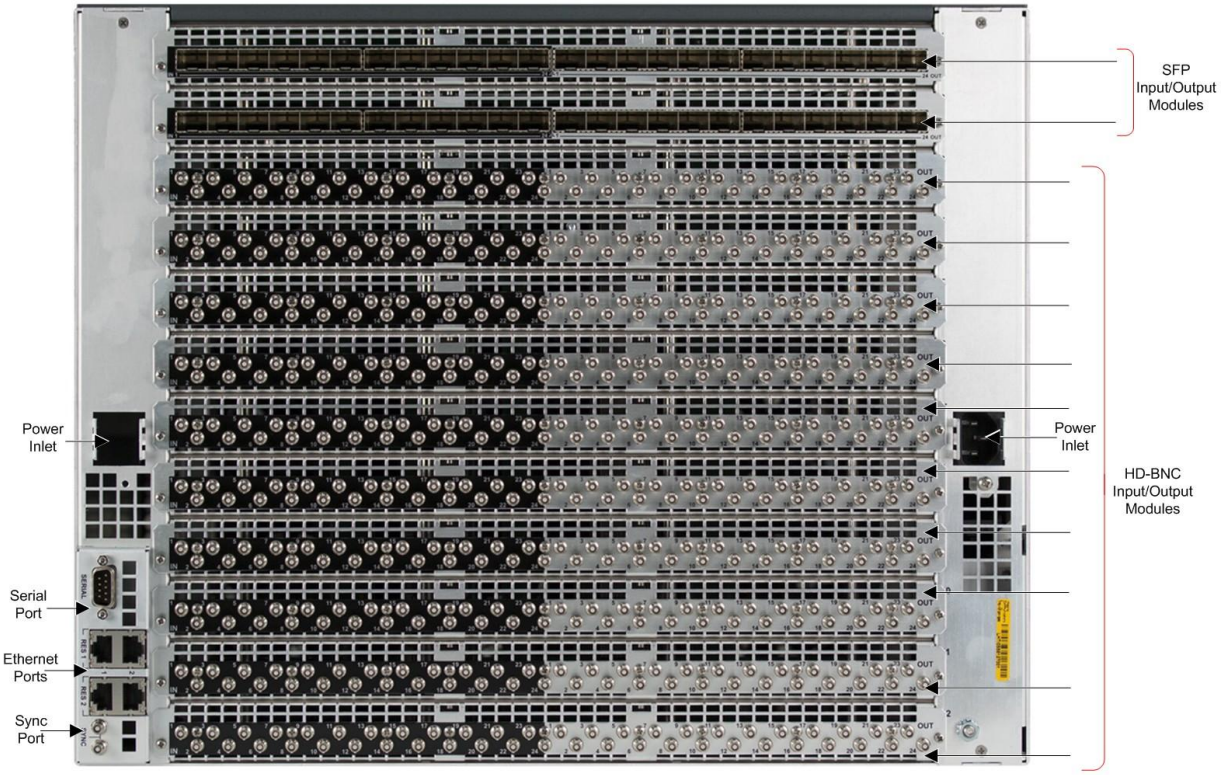


Figure 17: Platinum VX 8 RU - Rear View (showing 2 SFP and 10 HD-BNC modules)

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Platinum VX Specifications

Platinum VX Physical Specifications

Table 9: Platinum VX Physical Specifications

	1 RU	2 RU	4 RU	8 RU
Dimensions				
Width	17.5 in. (44.5 cm)	17.5 in. (44.5 cm)	17.5 in. (44.5 cm)	17.5 in. (44.5 cm)
Depth	10.75 in.	10.75 in.	18.5 in.(46.7cm)	18.5 in.(46.7cm)
Height	1.75 in	3.5 in	7 in	14 in
Weight (approx, fully loaded)	2.5kg	5kg	7kg	15kg
Matrix Size	16x16 + 16x16SFP	48x48 or 72x72	144x144	288x288
Matrix Module Capacity				
Back Modules	-	-	6	12
Resource/Crosspoint Modules	-	-	2	2
Standard Equipment				
Power Supplies	2	2	2	2
Fan Module	-	-	2	4
Resource/Crosspoint Module	-	-	1	1
Upgrade Options				
Redundant Resource/Crosspoint Module	No	No	Yes	Yes

Video Specifications

Table 10: Video Specifications

Item	Description
Connectors	• 75 Ohms (HD-BNC) • LC (Optical)
Signal Type	• SMPTE 424M • SMPTE 292M • SMPTE 259M • SMPTE 344M • DVB-ASI • Most other < 1Vpp digital signals, 3Mb/s to 3.0Gb/s
Impedance	75 Ohms (HD-BNC)
Return Loss	• > 15dB, up to 1.485GHz • > 10dB, 1.485GHz to 2.97GHz
Amplitude	• 800mV +/- 10% • 1600mV +/- 10%
Overshoot	<10%
DC Offset	0V +/- 0.5V
Rise Time	• 400-700pS - 270Mb/s • < 135pS - 1.485Gb/s • < 100pS - 2.97Gb/s
Fall Time	• 400-700pS - 270Mb/s • < 135pS - 1.485Gb/s • < 100pS - 2.97Gb/s
Jitter	• <0.2UI reclocked 270Mb/s, 1.485Gb/s • <0.3UI reclocked 2.97Gb/s

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Supported SFP Specifications

Table 11: SPF Specifications

SFP Type	SFP Type	Description
Optical SFPs	OP+SFP+2ORX+NR Dual Optical Receiver (see "OP+SFP+2ORX+NR Dual Optical Receiver Specifications" on page 35)	SFP Series, Dual channel optical inputs of SD/HD/3G PIN Receiver (non-reclocking)
	OP+SFP+2OTX+13+NR Dual Optical Transmitter (see "OP+SFP+2OTX+13+NR Dual Optical Transmitter Specifications" on page 36)	SFP Series, Dual channel optical outputs of SD/HD/3G 1310nm wavelength (non-reclocking)
Electrical SFPs	SFP+2ERX+NR Dual Electrical Receiver (see "SFP+2ERX+NR Dual Electrical Receiver Specifications" on page 36)	SFP Series, Dual-channel HD BNC inputs of SD/HD/3G (Non-reclocked output)
	SFP+2ETX+NR Dual Electrical Transmitter (see "SFP+2ETX+NR Dual Electrical Transmitter Specifications" on page 37)	SFP Series, Dual-channel HD BNC outputs of SD/HD/3G (Non-reclocked output)
Analog Converters	SFP+2E+DEC Dual Electrical Receiver (see "SFP+2E+DEC Dual Electrical Receiver Specifications" on page 38)	SFP Series, Dual-channel HD BNC Analog To Digital Decoder Input Module

SFP Type	SFP Type	Description
	SFP+2E+ENC Dual Electrical Transmitters (see "SFP+2E+ENC Dual Electrical Transmitters Specifications" on page 38)	SFP Series, Dual-channel HD BNC Digital To Analog Encoder Output Module
HDMI Converters	SFP+HDMI+OUT (see "SFP+HDMI+OUT Specifications" on page 39)	SFP Series, HDMI Output Module
	SFP+HDMI+IN (see "SFP+HDMI+IN Specifications" on page 40)	SFP Series, HDMI Input Module

Note that SFPs must be purchased from Imagine Communications.

Optical SFPs

OP+SFP+2ORX+NR Dual Optical Receiver Specifications

The **OP+SFP+2ORX+NR** is a dual optical receiver SFP designed to receive two SDI signals at up to 2.97 Gb/s over single mode fiber, and to convert optical SDI to electrical SDI, as defined in SMPTE 297-2006.

Table 12: OP+SFP+2ORX+NR Dual Optical Receiver Specifications

Item	Specification
Standards	• 3G: SMPTE 424M (2.97, 2.97/1.001 Gb/s) • HD: SMPTE 292M (1.485, 1.485/1.001 Gb/s) • SD: SMPTE 259M-C (270Mb/s, 525/625 component video) • ASI: DVB-ASI 270Mb/s
Wavelength	1150 - 1600 nm
Sensitivity	-19dBm (typical), ER=7dB, 3G pathological
Power Monitoring Accuracy	±3 dB
Maximum Back Reflection	-27 dB
Optical Return Loss	>29 dB
Maximum Input Power	+3 dBm (@1310 nm)
Power Consumption	Typical: 680 mW

OP+SFP+2OTX+13+NR Dual Optical Transmitter Specifications

The **OP+SFP+2OTX+13+NR** is an dual optical FP (Fabry-Perot) Transmitter, capable of transmitting two SDI signals up to 2.97 Gb/s over single-mode fiber and converting electrical-to-optical SDI signals, as defined in SMPTE 297-2006.

Table 13: OP+SFP+2OTX+13+NR Dual Optical Transmitter Specifications

Item	Specification
Standards	• 3G: SMPTE 424M (2.97, 2.97/1.001 Gb/s) • HD: SMPTE 292M (1.485, 1.485/1.001 Gb/s) • SD: SMPTE 259M-C (270Mb/s, 525/625 component video) • ASI: DVB-ASI 270Mb/s
Wavelength	Typical: 1310 nm (1260 - 1360 nm)
Spectral Line Width	Typical: 1.5 nm
Average Optical Output Power	Typical: -2.5 dBm (-6 to 0.5 dBm)
Extinction Ration	7 to 14 dB
Optical Rise/Fall Time	Typical: 70 ps
Power Consumption	Typical: 1080 mW

Electrical SFPs

SFP+2ERX+NR Dual Electrical Receiver Specifications

The **SFP+2ERX+NR** is an electrical dual receiver SFP module, designed to receive two SDI signals at up to 2.97 Gb/s over 75 ohm coaxial cables via HD-BNC connectors. The integrated equalizer features DC restoration to compensate for the DC content of SMPTE pathological test patterns.

Table 14: SFP+2ERX+NR Dual Electrical Receiver Specifications

Item	Specification
Connector Type	HD-BNC
Standards	• 3G: SMPTE 424M (2.97, 2.97/1.001 Gb/s) • HD: SMPTE 292M (1.485, 1.485/1.001 Gb/s) • SD: SMPTE 259M-C (270Mb/s, 525/625 component video) • ASI: DVB-ASI 270Mb/s
Impedance	75 ohms
Return Loss	• 3G: >15 dB from 5 MHz to 1485 MHz; >10 dB from 1485 MHz to 2970 MHz • HD: >15 dB from 5 MHz to 1485 MHz • SD: >15 dB from 5 MHz to 270 MHz

Item	Specification
Equalization	• 3G: 120 m (typical) for Belden 1694A • HD: >150m for Belden 1694A • SD: >420m for Belden 1694A; > 320m for Belden 8281B
Power Consumption	Typical: 620 mW

SFP+2ETX+NR Dual Electrical Transmitter Specifications

The **SFP+2ETX+NR** is a dual electrical SFP transmitter, designed to transmit two SDI signals at up to 2.97 Gb/s over 75 ohm coaxial cables via HD-BNC connectors.

Table 15: SFP+2ETX+NR Dual Electrical Transmitter Specifications

Item	Specification
Connector Type	HD-BNC
Standards	• 3G: SMPTE 424M (2.97, 2.97/1.001 Gb/s) • HD: SMPTE 292M (1.485, 1.485/1.001 Gb/s) • SD: SMPTE 259M-C (270Mb/s, 525/625 component video) • ASI: DVB-ASI 270Mb/s
Impedance	75 ohms
Return Loss	• 3G: >15 dB from 5 MHz to 1485 MHz; >10 dB from 1485 MHz to 2970 MHz • HD: >15 dB from 5 MHz to 1485 MHz • SD: >15 dB from 5 MHz to 270 MHz
Signal Level	800 mV ± 10%
D.C. offset	0.0 V ± 0.5 V
Rise and fall time	• 3G: <135 ps • HD: <270 ps • SD: 0.4 to 1.5 ns
Overshoot	< 10% of amplitude
Jitter	• 3G: <2.0 UI (10Hz), <0.3 UI (100KHz) • HD: <1.0 UI (10Hz), <0.2 UI (100KHz) • SD: <0.2 UI
Power Consumption	Typical: 340 mW

Analog Converters

SFP+2E+DEC Dual Electrical Receiver Specifications

The **SFP+2E+DEC** is a dual electrical SFP receiver, designed to decode two video composite (CVBS) signals over 75 ohm coaxial cables via HD-BNC connectors. The module decodes NTSC/PAL composite inputs and converts to SD-SDI signals.

Table 16: SFP+2E+DEC Dual Electrical Receiver Specifications

Item	Specification
Connector Type	HD-BNC
Standards	• NTSC, NTSC J, and NTSC 4.43 • PAL-B/G/H/I/D, PAL-M, PAL-N, and PAL-60
Impedance	75 ohms
Return Loss	30 dB (typical) from 0.1 MHz to 6 MHz
Input Level	270 to 830 mV pk-to-pk
Cutoff Frequency (3dB)	Typical: 13 MHz
Passband Flatness	Typical: 0.25 dB (f < 5MHz, VVIN = 0.65 V pk-to-pk, reference level measured at 1MHz)
Stopband Cutoff	Typical: 53 MHz
Signal-to-Noise Ratio	Typical: 58 dB
Propagation delay	• NTSC: 260 us • PAL: 231 us
Power Consumption	Typical: 1020 mW

SFP+2E+ENC Dual Electrical Transmitters Specifications

The **SFP+2E+ENC** is a dual electrical transmitter SFP module that encodes video composite (CVBS) signals over 75 ohm coaxial cables via HD-BNC connectors. The module converts SD-SDI signals to NTSC/PAL composite output.

Table 17: SFP+2E+ENC Dual Electrical Transmitter Specifications

Item	Specification
Connector Type	HD-BNC
Standards	NTSC, PAL-M, PAL-B/G/H/I/D, PAL-N
Impedance	75 ohms
Return Loss	30 dB (typical) from 0.1 MHz to 6 MHz
Output level	0 - 1.0 V pk-to-pk (300 mV DC offset)
Resolution	0 bits

Item	Specification
Luminance Nonlinearity	Typical: ±0.5%
Differential Gain	Typical: 0.5% (NTSC)
Differential Phase	Typical: 0.6 deg (NTSC)
Signal-to-Noise Ratio	58 dB, typical, luma ramp
Propagation delay	• NTSC: 3.4 us • PAL: 3.2 us
Power Consumption	Typical: 1220 mW

HDMI Converters

SFP+HDMI+OUT Specifications

The SFP+HDMI+OUT is an electrical transmitter module designed to convert SDI signals to an HDMI output without scaling artifacts. Up to eight channels of audio are supported in HDMI mode.

Table 18: SFP+HDMI+OUT Specifications

Item	Specification
Connector Type	HDMI 1.4 type-D
Standards	• 525i/625i, • 1080i (50/59.94/60 Hz) • 720p/1080p (23.98/24/25/29.97/30/50/59.94/60 Hz) • 1080p Level B-DL (50/59.94/60 Hz)
TMDS Output Clock Freq	20 to 150 MHz
TMDS Output Clock Duty Cycle	48% to 52%
TMDS Differential Swing	Typical: 1000 mV (800 to 1200 mV)
TMDS Rise/Fall Time	Typical: 175 ps (Min: 75 ps)
Maximum Output Current (5V)	Min: 55 mA
Output Voltage (5V)	Typical: 5.05V (4.8 to 5.3 V)
Power Consumption	Typical: 1030 mW

SFP+HDMI+IN Specifications

The **SFP+HDMI+IN** is an electrical receiver module designed to convert HDMI input to a SDI format without scaling artifacts. Up to 4 channels of audio are supported in HDMI mode.

Table 19: SFP+HDMI+IN Specifications

Item	Specification
Connector Type	HDMI 1.4 type-D
Standards	• 525i/625i, • 1080i (50/59.94/60 Hz) • 720p/1080p (23.98/24/25/29.97/30/50/59.94/60 Hz)
TMDS Input Clock Freq	20 to 165 MHz
TMDS Clock Duty Cycle	Typical: 50% Minimum: 45%
Intrapair Differential Input Skew	Min: 0.4 t BIT
Channel-to-Channel Differential Input Skew	Min: 0.6 t PIXEL
Power Consumption	Typical: 1283 mW

Platinum VX Modules

Table 20: Platinum VX Modules

Module	Description
PV-24C-IOG	**Platinum VX SD/HD/3G Modular 24 input and 24 output Coax Video I/O Module** See HD-BNC I/O Module (see "HD-BNC I/O Module (PV-24C-IOG)" on page 43)
PV-24O-IOG	**Platinum VX SD/HD/3G Modular 24 input and 24 output SFP Cage Video I/O** See SFP I/O Module (see "SFP I/O Module (PV-24O-IOG)" on page 43)
PV-144X144-3G4	**Platinum VX SD/HD/3G 144X144 Video Crosspoint and Control Modul**e For 4 RU. See Resource/Crosspoint Module (PV-144X144-3G4 or PV-288X288-3G8) (on page 53)
PV-288X288-3G8	**Platinum VX SD/HD/3G 288X288 Video Crosspoint and Control Modul**e For 8 RU. See Resource/Crosspoint Module (PV-144X144-3G4 or PV-288X288-3G8) (on page 53)
PV-PS	**Platinum VX Power Supply (Redundant, AC**) See Platinum VX Power Supplies (on page 67)
	Communications Back Module See Communication Back Module (see "Communications Back Module" on page 60)
	Front Fan Module See Front Fan Module (on page 47)
	Fan Control Module See Fan Control Module (on page 52)
	Mid Plane See Mid Plane Module (on page 65)

Input/Output Modules

The number of modules in the Platinum VX Frame depends on the frame size.

Note: These individual input/output modules only apply to 4 and 8 RU frames. The 1 and 2 RU frames have no modules, just built-in connectors; the 2 RU frame is factory fitted depending on how you order it (3 configurations available).

For 4 and 8 RU frames, you can have modules with electrical inputs/outputs (see HD-BNC I/O Module (PV-24C-IOG) (on page 43)) as well as modules with SFP inputs/outputs (see SFP I/O Module (PV-24O-IOG) (on page 43)).

Table 21: Input/Output Modules in different Platinum VX variants

Frame Size	Modules	Inputs	Outputs
8 RU	12	288	288
4 RU	6	144	144
2 RU	-	72 (HD-BNC)	72 (HD-BNC)
	-	48 (HD-BNC)	48 (HD-BNC)
	-	72 (48 HD-BNC and 24 SFP)	72 (48 HD-BNC and 24 SFP)
1 RU	1 (electrical only)	16	16
	(with the 16 SFP cages used)	32	32

HD-BNC I/O Module (PV-24C-IOG)

The HD-BNC back module offers 24 electrical inputs and 24 electrical outputs. Through the web based UI, for each Input or Output module, you can see status and set editable parameters. See Modules in the Frame (see "Modules/Components in the Frame" on page 90).

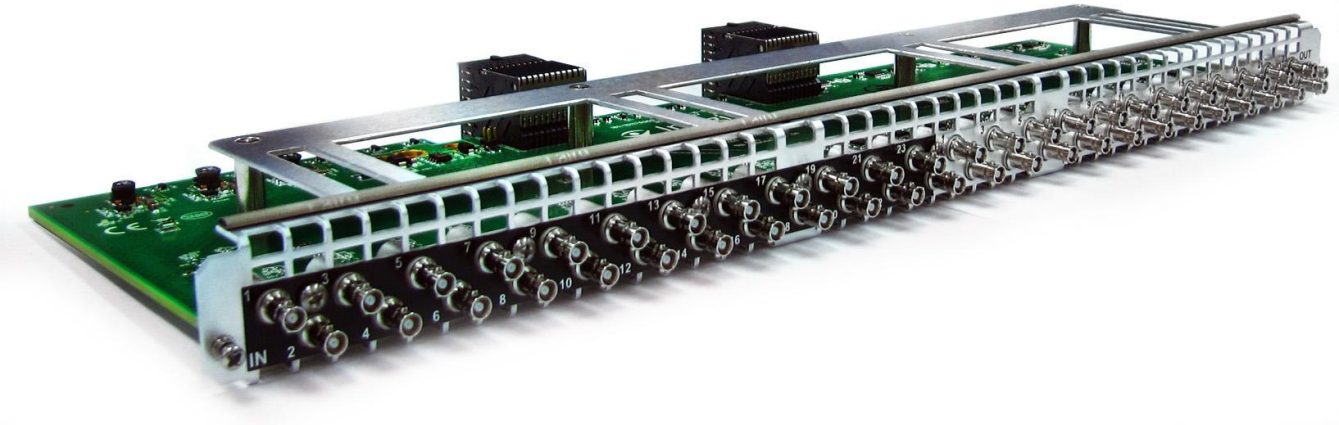


Figure 18: HD-BNC Input/Output Module

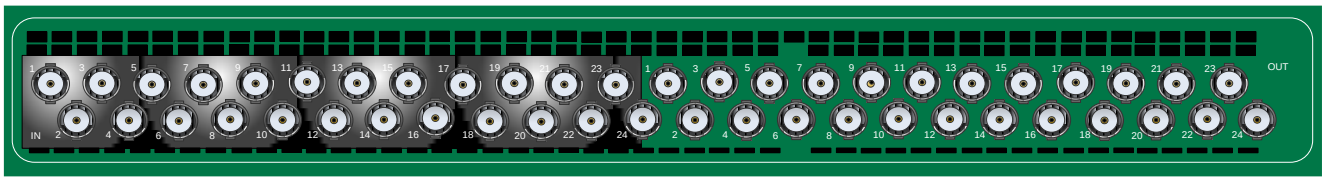


Figure 19: Connectors on the HD-BNC Input/Output Module

SFP I/O Module (PV-24O-IOG)

The SFP back module offers 24 inputs and 24 outputs. Through the web based UI, for each Input or Output module, you can see status and set editable parameters. See Modules in the Frame (see "Modules/Components in the Frame" on page 90).

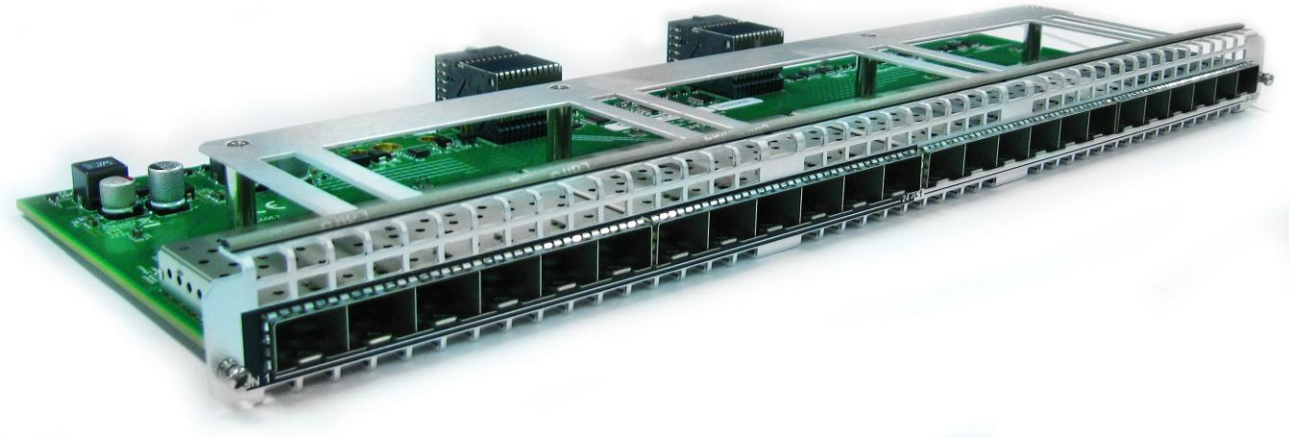


Figure 20: SFP Input/Output Module

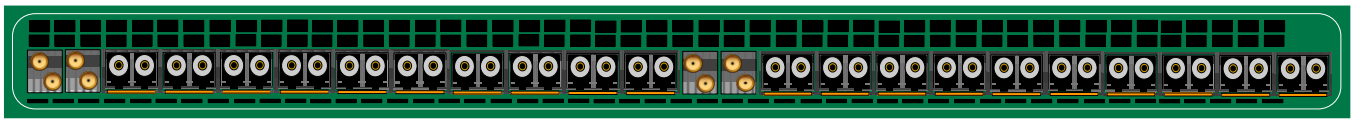


Figure 21: Connectors on the SFP Input/Output Module

For supported SFP modules and specifications, see Supported SFP Types (see "Supported SFP Specifications" on page 34).

Note that SFPs must be purchased from Imagine Communications.

Back Module Extractor (1261Q)

A back module extractor (1261Q) is shipped with 4 and 8 RU frames. You can find the extractor in the accessories box. The extractor is used to remove HD-BNC or SFP back modules from 4 or 8 RU frames.

Figure 22: Back Module Extractor

Once removed from the accessories box, there is a slot on the bottom right hand corner of the frame that the Extractor can be placed into when not in or use or for general convenience.

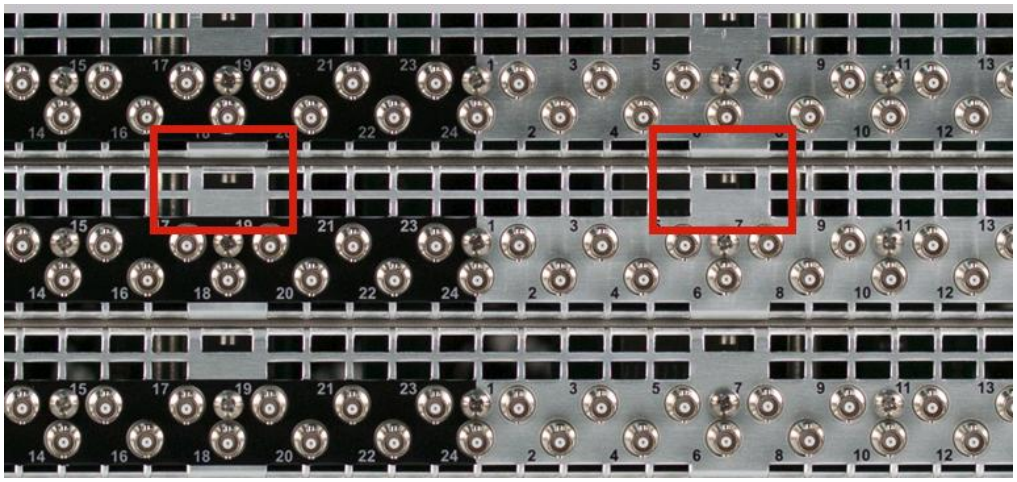
Figure 23: Slots for Extractor

Figure 24: Extractor inserted into slots

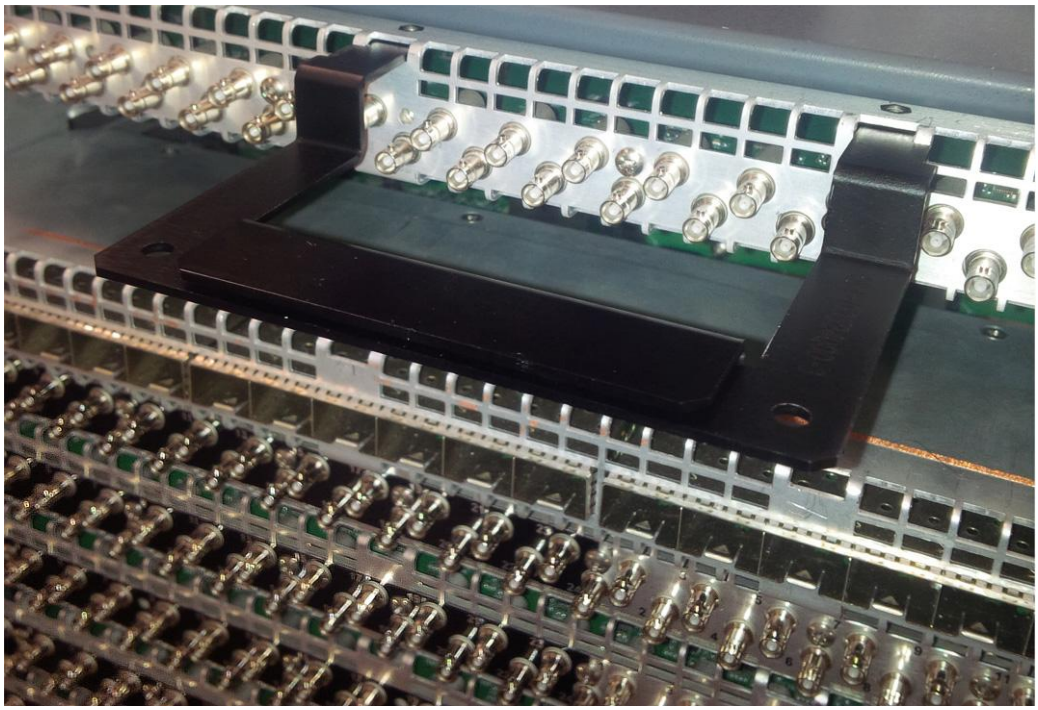
To use the extractor to remove a back module:

1. Loosen the screws on both sides of the module to be removed.

2. Note the two guide holes at the top (center) of the module that the extractor needs to go into.



3. Place the back module extractor into the guide holes and then hold and firmly pull the extractor handle to remove the module from the frame.



Front Fan Module

- The 1 and 2 RU Platinum VX frames have four fans that are connected directly to the main board.
- The 4 RU Platinum VX frame has 2 fan modules, with 4 fans mounted on each fan.
- The 8 RU Platinum VX frame has 16 fans mounted on four front fan modules.

Since the 4 and 8 RU Platinum VX frames both have redundant Crosspoint/Control modules, grouping the fans on separate fan modules ensures the active Crosspoint/Control Module is cooled if the redundant Crosspoint/Control Module is removed in order to be serviced.

When the frame is powered up, by default, the fans initially run at full speed, and then stabilize to normal speed in a minute or so. The fan speed is also configurable from the web interface via the **Fan Speed Control** parameter. See Front Fan Parameters (on page 117).

If any of the fans in the group fail, an alarm is triggered (see Fault Descriptions (see "System Fault Descriptions" on page 132)), and the speed of all remaining fans in the same group or all remaining fans is increased to 100%.

CAUTION: Front Fan modules are the main source of cooling for the entire system. In the event of a fan failure, ensure that you replace the fan as soon as possible to prevent overheating.

Note that in case of 1 RU frames, because the fans used are different from the other frames, changing the fan speed (via the **Fan Speed Control** parameter) from Maximum to Normal does not result in a noticeable reduction in sound.

Fan Status

Each fan reports its status to the control system. Fan Status is presented to users in different ways:

<table>
<tr><th rowspan="2">Frame</th><th colspan="2">SOFTWARE STATUS</th><th>HARDWARE STATUS</th></tr>
<tr><th>Alarm</th><th>Chassis Fan Status</th><th>Fan LEDs</th></tr>
<tr><td>1 RU</td><td rowspan="4">An Alarm is triggered if a fan fails.

See Fan Alarms (on page 49)</td><td rowspan="4">Color status indicators on the Control System dashboard indicate fan status.

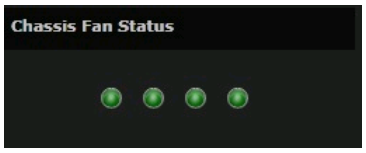
See Chassis Fan Status on the Controller Dashboard (on page 48)</td><td rowspan="2">No fan specific LEDs, see System LEDs (on page 81)</td></tr>
<tr><td>2 RU</td></tr>
<tr><td>3 RU</td><td rowspan="2">Fan LEDs on the outside of the frame indicate fan status.

See Fan Status on LEDs on the Frame (see "Fan Status Hardware LEDs on the Frame" on page 48)</td></tr>
<tr><td>4 RU</td></tr>
</table>

Chassis Fan Status on the Controller Dashboard

The main dashboard has fan status graphically represented with red (alarm or missing) and green (good) software LEDs as fan status indicators.

- 1 and 2 RU frames have indicators for each of the 4 fans on board.



- 4 and 8 RU frames display fans in fan module groups, indicating fan status.

Fan Status Hardware LEDs on the Frame

4 and 8 RU frames have Hardware LEDs for fan status on the front of the frame.

For example, in case of the 4 RU frame below, there are 4 LEDs on each fan module, and each LED points to the specific fan that it providing status for. There are 8 fan LEDs on a 4 RU Platinum VX.

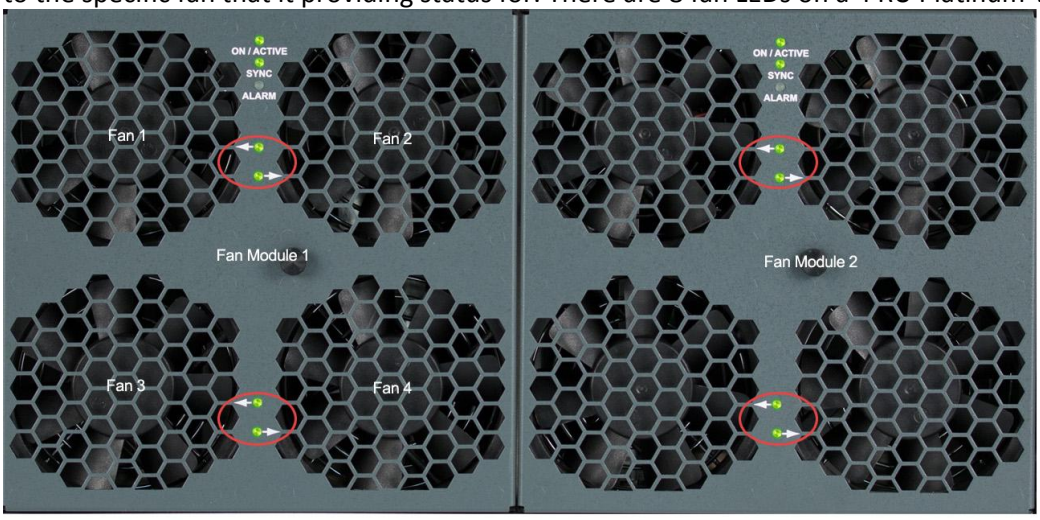


Figure 25: Fan Status LEDs on 4 RU Platinum VX

There are 16 fan LEDs on an 8RU Platinum VX.

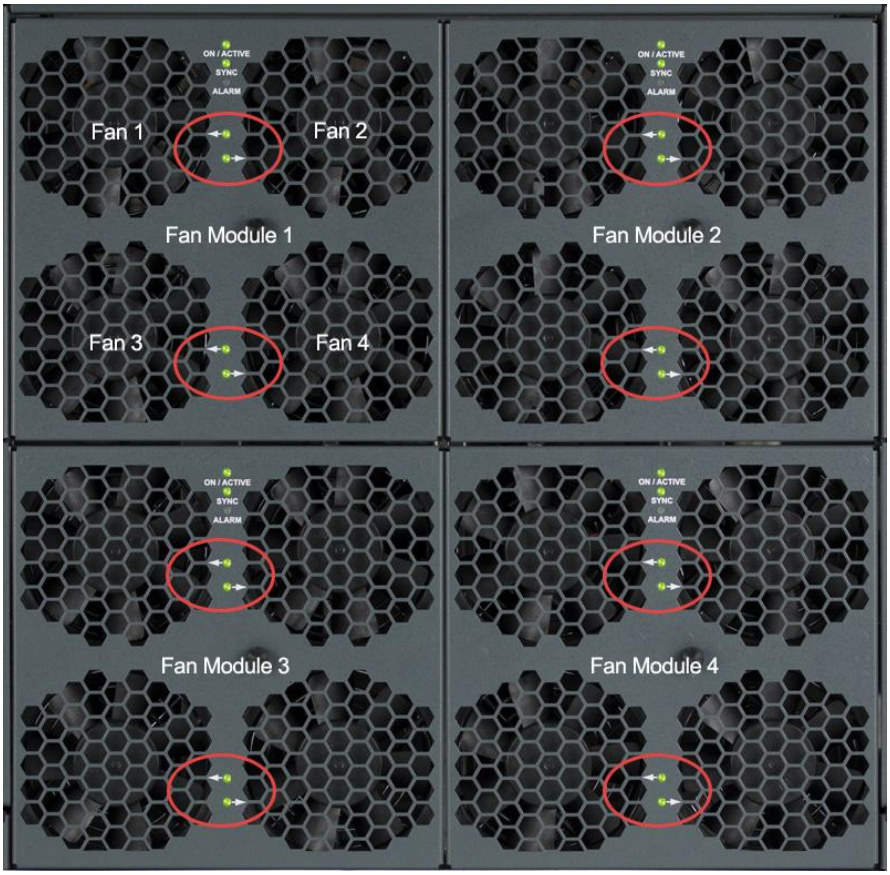


Figure 26: Fan Status LEDs on 4 RU Platinum VX

For 1 and 2 RU frames that have no fan specific hardware LEDs (like the 4 and 8 RU frames), the System level **Alarm** LED is the only hardware indication of a possible fan failure. See System LEDs (on page 81).

Fan Alarms

If a fan fails, an alarm is asserted and details are displayed in the **Faults View**.

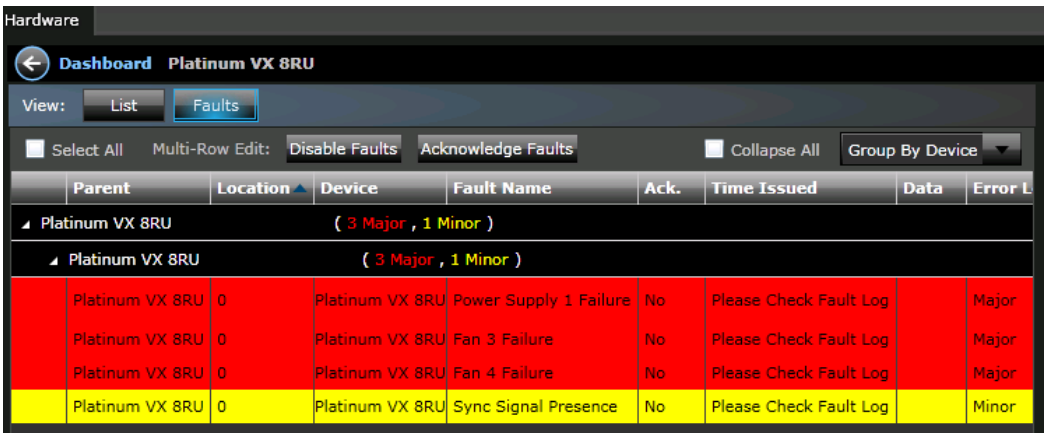

Hardware
Dashboard Platinum VX 8RU
View: List Faults
Select All Multi-Row Edit: Disable Faults Acknowledge Faults Collapse All Group By Device
Parent Location Device Fault Name Ack. Time Issued Data Error L
Platinum VX 8RU (3 Major , 1 Minor)
Platinum VX 8RU (3 Major , 1 Minor)
Platinum VX 8RU 0 Platinum VX 8RU Power Supply 1 Failure No Please Check Fault Log Major
Platinum VX 8RU 0 Platinum VX 8RU Fan 3 Failure No Please Check Fault Log Major
Platinum VX 8RU 0 Platinum VX 8RU Fan 4 Failure No Please Check Fault Log Major
Platinum VX 8RU 0 Platinum VX 8RU Sync Signal Presence No Please Check Fault Log Minor

Figure 27: Fan Failures in the Faults View

Servicing/Replacing Fan Modules in 1/2 RU Frames

1 and 2 RU frames have four individual fans. To replace a fan in a 1 or 2 RU frame:

1. First unscrew the front panel and remove the two captive screws.

Figure 28: Unscrewing the front of a 1 RU frame

2. Once the front comes off, you can remove any of the 4 individual fans by first unplugging the fan connector

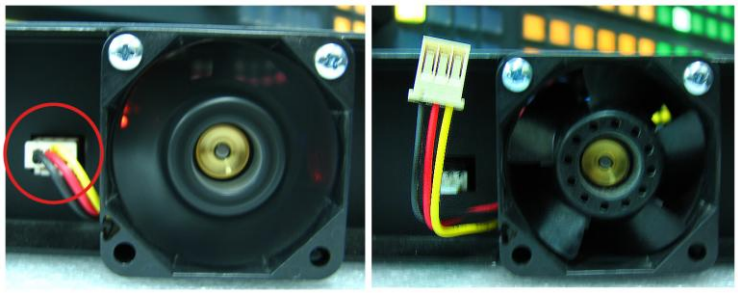


Figure 29: Disconnecting the Fan connector from a fan in a 1 RU frame

3. Then remove the two top screws on the fan, and remove the fan from the frame

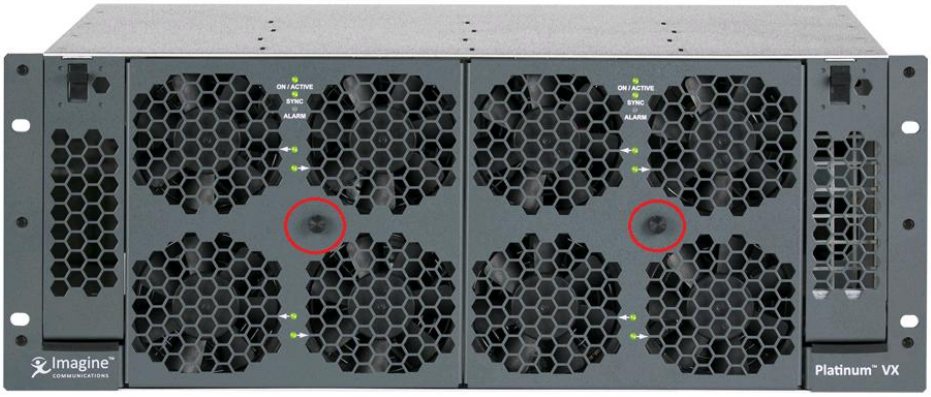
Figure 30: Unscrewing a fan in a 1 RU frame

Servicing/Replacing Fan Modules in 4/8 RU Frames

In a 4 or 8 RU frame, fans are mounted onto fan modules, 4 fans to a fan module, 2 fan modules in a 4 RU frame, and 4 fan modules in an 8 RU frame. The fan module has a connector in the center that plugs into the fan control module (see Fan Control Module (on page 52)) in the frame.

To replace a fan in a 4 or 8 RU frame, you have to remove the entire fan module.

1. Loosen the knob in the center of the module and then gently pull the fan module out.



2. Then unplug each of the 4 connectors for a fan module.

Figure 31: Fan Module in a 4 RU frame

3. Once you remove the fan module, individual fans can be unscrewed by removing the screws in all 4 corners.

Note: If you need to service the Crosspoint/Control Module (4/8 RU frames only), the fan modules need to be removed. For the 8 RU, the two left fan modules have to be extracted from the system. For the 4 RU, only one fan module needs to be removed.

Front Fan Settings

You can control Front Fan settings via the Web based UI. See Front Fan Parameters (on page 117).

Fan Control Module

Note: This section is applicable to 4 RU and 8 RU frames that have a fan control module. 1 and 2 RU frame fans are controlled by the circuit on the main board.

In 4 and 8 RU Platinum VX frames, the Fan control module controls the front fan module. Fan status is reported to the Controller module. The following are the number of Fan Control modules depending on the frame size:

Frame Size	Number of Fan Control Modules
4 RU	2
8 RU	4

If you take the front of the frame (which has the fan module embedded in it) off by loosening the knob in the center and then gently pulling it off, you can see the Fan Control Module that plugs into a connector on the Fan Module.

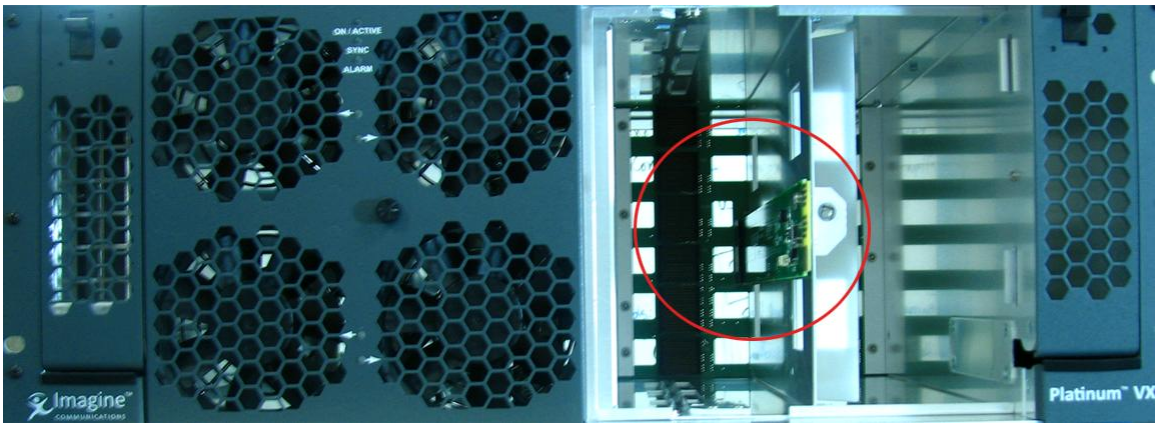


Figure 32: Fan Control Module in a 4 RU Platinum VX Frame

Resource/Crosspoint Module (PV-144X144-3G4 or PV-288X288-3G8)

The Resource/Crosspoint module is present in 4 and 8 RU frames. This module performs both Control functions as well as Crosspoint functions. The module is located in the middle of the frame and visible when the front panel door is removed.

The Resource/Crosspoint module that goes into a 4 RU frame is different from the one that goes into an 8 RU frame The **PV-144X144-3G4** Module goes in a 4 RU frame, and the **PV-288X288-3G8** module goes in an 8 RU frame.

There are 2 slots in each frame for Resource/Crosspoint modules, but only one module is standard with the frame. A second one can be purchased for redundancy. See Resource Module Redundancy (on page 54).

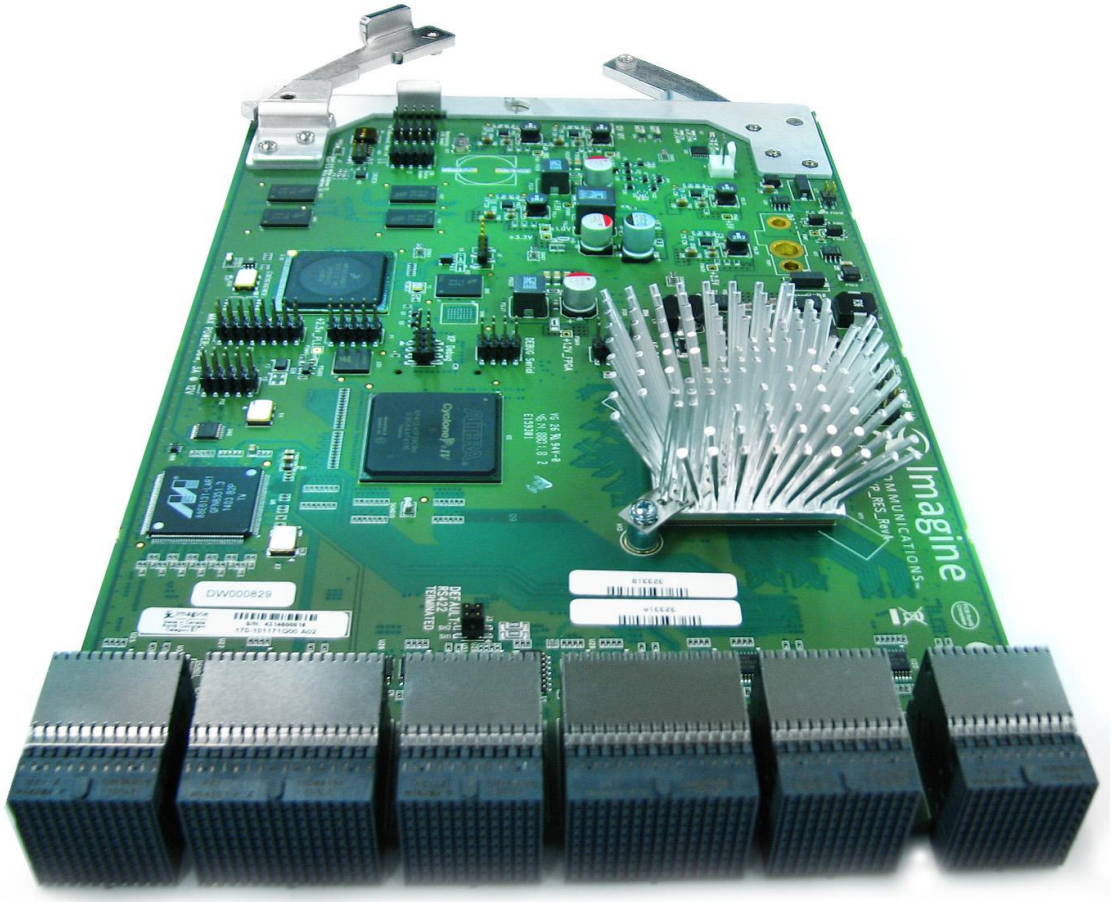


Figure 33: 4 RU Resource/Crosspoint Module

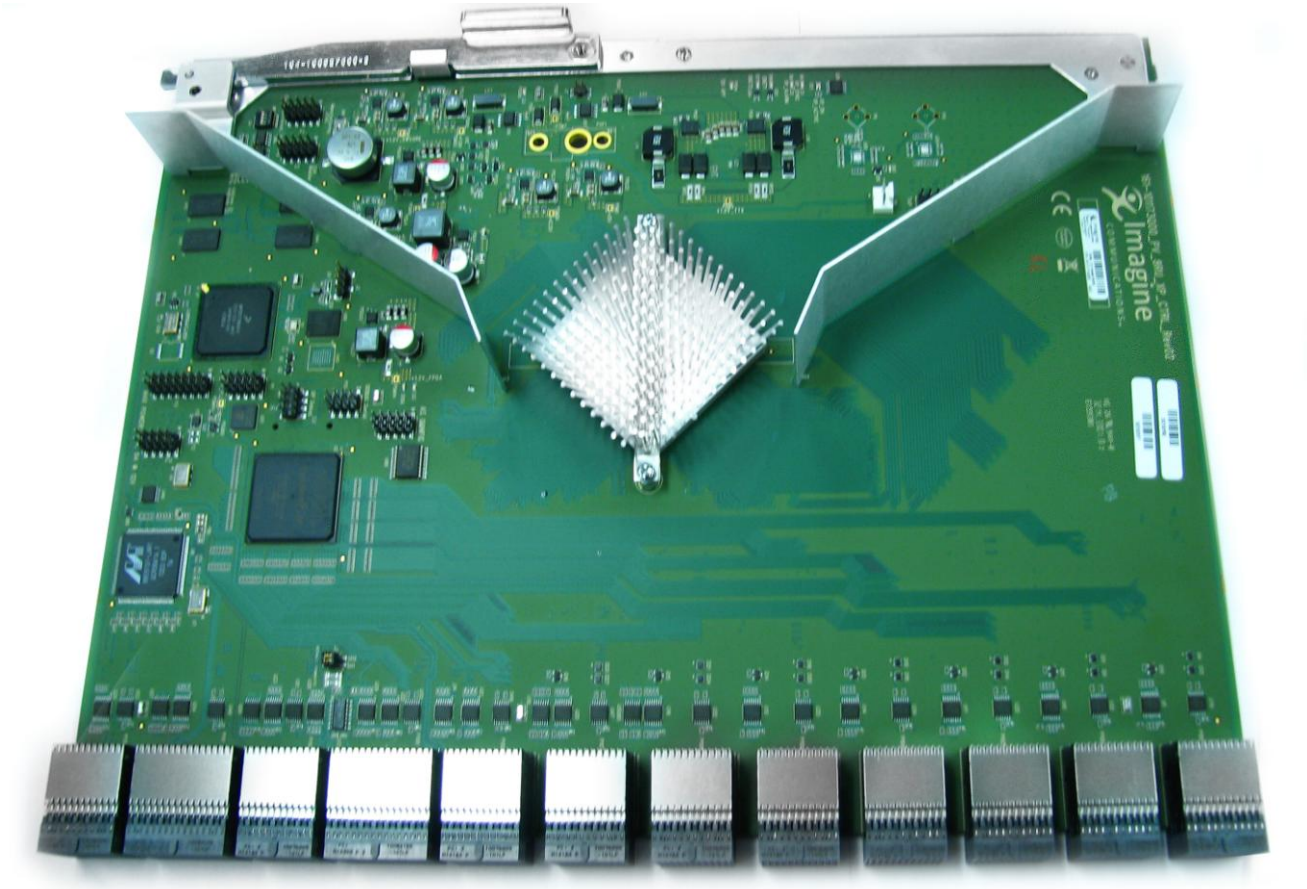


Figure 34: 8 RU Resource/Crosspoint Module

Resource Module Redundancy

4 RU and 8 RU Platinum VX frames support optional redundancy for the Crosspoint/Resource Module within the frame. 4/8 RU frames come with a single Crosspoint/Resource Module, and a second one can be used for redundancy. If one module detects failure of the other, it switches over control and continues router operation.

Note that there is only 1 Crosspoint/Resource module in 1/2 RU frames.

If you have 2 Crosspoint/Resource Modules, you can set the active one via the **Select Active PVX-RES/Video Crosspoint** parameter in the **Video Crosspoint and Control Card** section of the **Frame Parameters** (accessed by clicking the Open Frame button.

In case of redundant Resource/Crosspoint modules, when upgrading resource module firmware, images are also synchronized. If the alternate firmware image is activated on the active module, the alternate image on the standby module also becomes active.

In normal operating mode, all parameter and route changes are synchronized from the Active/Master Resource Module (PVX-RES) to the Standby Resource Module (PVX-RES).

- Active and Standby states are non-volatile
- An active PVX-RES remains active after a power cycle
- The standby PVX-RES only becomes active if the active PVX-RES is removed or in case of manual failover
- If two PVX-RES modules are inserted into a frame and powered up at the same time, the PVX-RES in the top slot will have higher priority.

You can control Redundancy settings via the Web based UI. See Redundancy Parameters (on page 118).

Adding a Second Resource Module into a Platinum VX Frame

When a second Resource module is inserted into a frame that already has an active Resource module, it influences the determination of the new active Resource module for the frame, based on 2 factors:

- Its role in the previous frame it was in (whether it was Active or Redundant)
- Its position in the new frame it is inserted into (whether it is inserted into Slot 1 or the Slot 2 of the frame)
- Whether it is inserted when the frame is operational or powered down

For example, if a frame containing a single active Resource module in Slot 2 is powered down before inserting a second Resource module (that was previously active in another frame) into Slot 1, when the frame is powered up again, the newly inserted Resource Module in Slot 1 becomes the active one and retains the route configurations of the frame it was previously in.

To maintain the precedence of the existing (active) Resource module in your frame, it is recommended that you:

- Insert a second Resource module while the frame is operational, without powering it down and wait for the synchronization process to complete.
- Ensure the existing Resource module is in Slot 1 of your frame
- Ensure the inserted Resource module is put into Slot 2 of the frame

Resource/Video Crosspoint Settings

You can control view status and control Video Crosspoint settings via the Web based UI. See Video Crosspoint and Control Parameters (on page 117).

Installing the Resource/Crosspoint Module into the Frame

1. When installing the Crosspoint Module into the Frame, note the notch at the bottom of the frame that the card should slide into.	
2. Position the Crosspoint Module in the slot and slide into the frame.	

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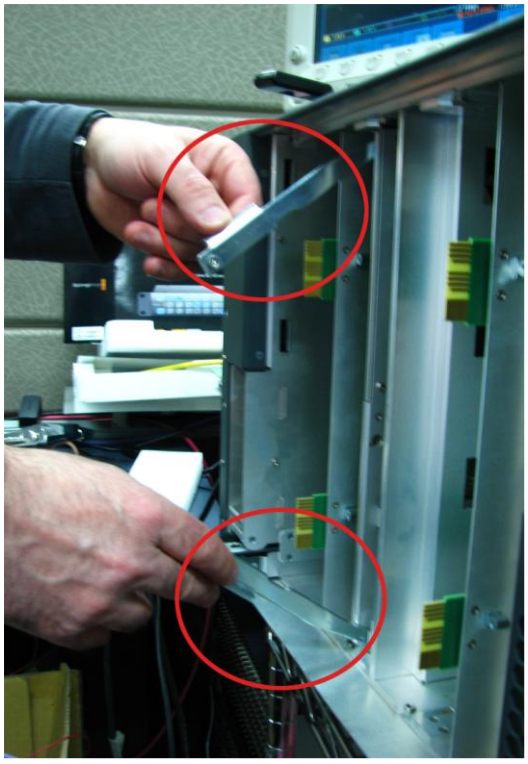
3. Once you slide the module in, wait until the module is positioned in the frame such that the top and bottom extractors come together easily. Then slide them into place.	

Extracting the Resource/Crosspoint Module from the Frame

1. Locate the Crosspoint Module in the frame.	

2. Loosen the top and bottom extractors on the Crosspoint module by gently pulling the extractors outward.	
3. Once the extractors have been loosened, grasp the upper and lower extractors and pull outward to slide the module out of the frame.	

Resource/Crosspoint Status on the Frame

Crosspoint/Resource Modules in 4 and 8 RU frames indicate their status via **ON/ACTIVE** LEDs on the front of the frame.

A 4 RU frame has 2 O**N/ACTIVE** LEDs on the front of the frame, one for each of the 2 Crosspoints (if present). The LED is will be green for the active crosspoint, and yellow for the secondary crosspoint. If there is only one Crosspoint in the frame, only 1 LED will be lit.

Figure 35: Resource/Crosspoint Module LEDs on a 4 RU Frame

An 8 RU frame has 4 **ON/ACTIVE** LEDs. When looking at the frame from the front:

- The **ON/ACTIVE** LED on the top left and bottom left-hand corners represent one Crosspoint (both crosspoint LEDs mirror each other)
- The **ON/ACTIVE** LED on the top right and bottom right-hand corners represent the second Crosspoint, if present (both crosspoint LEDs mirror each other)

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The LEDs will be green for the active crosspoint, and yellow for the secondary crosspoint. If there is only one Crosspoint in the frame, only 1 LED (top and bottom) will be lit.

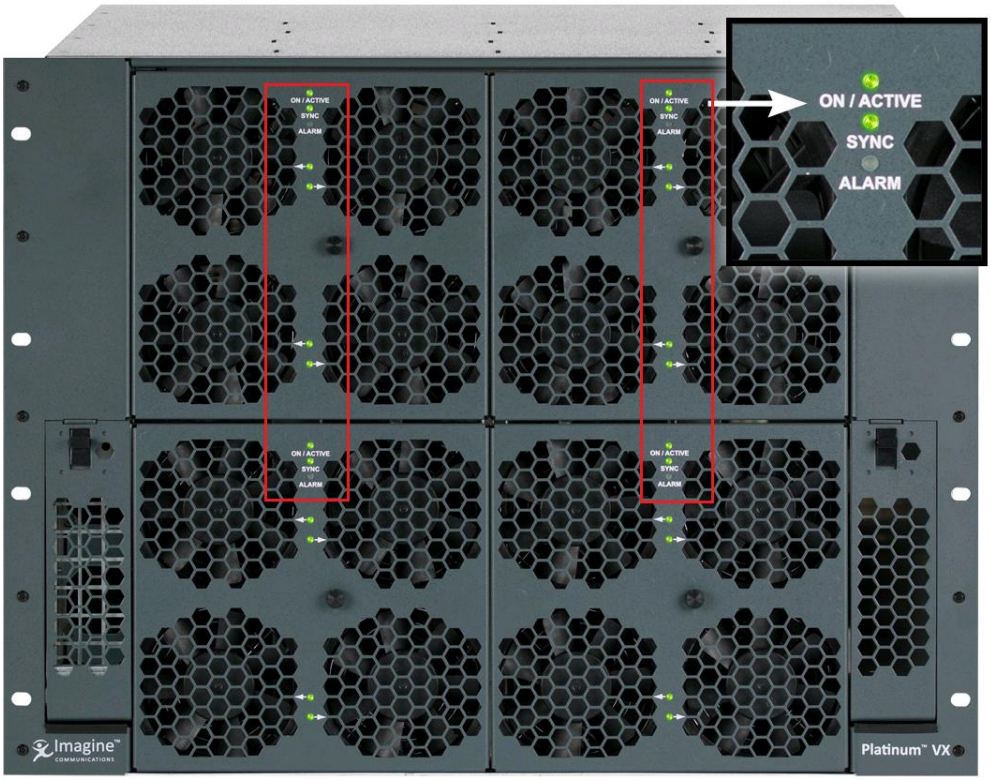


Figure 36: Resource/Crosspoint Module LEDs on an 8 RU Frame

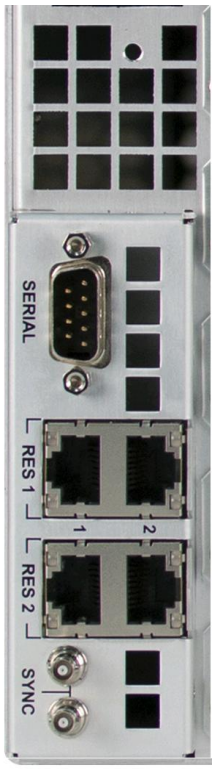
Communications Back Module

The Communications Back Module provides an interface between communications connectors and Resource Modules. All control ports remain inactive until, and only if, the router has fully booted and has established communications.

Even in a powered-down state, a router connected to any communications system must not interfere with that system, and therefore must not violate the communications standard (RS-232, RS-422, IEEE 802, etc.) when in this state.

The following connector types are available on the module:

- Two Ethernet Ports (RJ 45 10/100/1000)
- One Serial Port (RS 232/422)
- One Sync Port (loop through HD-BNC Video Reference)



Ethernet Ports

ENET 1	
IP Address 1	192.168.100.250
IP Mask 1	255.255.255.0
Gateway Address 1	192.168.100.1
ENET 2	
IP Address 2	192.168.101.250
IP Mask 2	255.255.255.0
Gateway Address 2	0.0.0.0

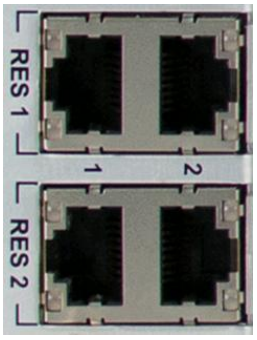


Figure 37: Ethernet Ports on the Rear of an 8 RU Platinum VX Frame

You can control Ethernet settings via the Web based UI. See Ethernet 1 Parameters (on page 121) and Ethernet 2 Parameters (on page 122).

Changing the Default Primary and Secondary IP Addresses

Ethernet settings can be changed via the Platinum VX Web interface. To do this:

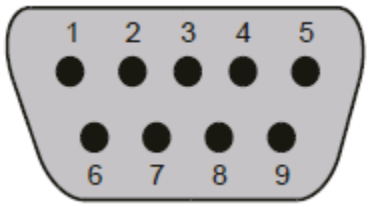
1. Launch the Platinum VX UI in a web browser
2. Click the **Configure System** link in the top right hand corner.
3. Click **Manage Controller Settings**
4. Set new IP Addresses in the **Primary IP** and **Secondary IP** fields.

Serial Ports

See Serial Port Parameters (on page 123) to control settings via the Web based UI.

RS-232 Pin Assignments

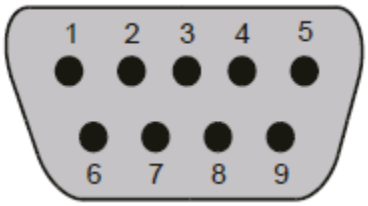
Table 22: RS-232 Signal Format Pin Assignments



Pin	Function
1	Frame Ground
2	RxD (Data received by router)
3	TxD (Data sent by router)
4	Data Terminal Ready*
5	Ground
6	Data Set Ready (DSR)*
7	Request to Send (RTS)**
8	Clear to Send (RTS)**
9	Frame Ground
	* Pins 4 and 6 connected internally. ** Pins 7 and 8 connected internally

RS-422 Pin Assignments

Table 23: RS-422 Signal Format Pin Assignments



Pin	Signal (Tributary)	Description	Connection to Remote Computer (Controller)
1	FG	Frame ground	Frame ground
2	Ta (Tx-)	Transmitted data (twisted pair)	Ra (Rx-)
7	Tb (Tx+)		Rb (Rx+)
6	Tc	Received data shield	Received data shield
8	Ra (Rx-)	Received data (twisted pair)	Ta (Tx-)
3	Rb (Rx+)		Tb (Tx+)
4	Rc	Transmitted data shield	Transmitted data shield
9	FG	Frame ground	Frame ground
5	SP	(Not connected)	(Not connected)

Sync Ports

The communications back module on the rear of 4 and 8 RU Platinum VX frames includes a sync port with looping connectors. Each sync input automatically detects and locks to <NTSC, PAL, analog HD Tri-Level> signals.

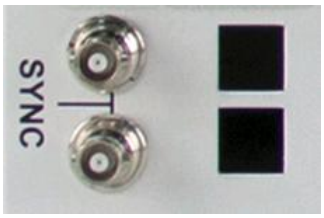


Figure 38: Sync Ports on the rear of 4/8 RU Platinum VX frames

Sync References and Switch Triggering

If no Sync signals are present, the switches occur asynchronously after a reasonable time-out period (<0.1 seconds from reception of command). If a sync reference was present and is then removed (or accidentally goes away), the router maintains relative vertical interval switching until a reference is detected.

The following references can be detected and used to switch the following video standards on the correct lines as per SMPTE RP168.

Switch Triggering

Signal Standard SwitchPoint Standard	**Signal Line**	**Detected Reference**
1080I/59.54	7	525/59.94I
1080P/59.94	7	525/59.94I
720P/59.94	7	525/59.94I
525/59.94/I	10	525/59.94I
1080I/50	7	625/50/I
1080P/50	7	625/50/I
720P/50	7	625/50/I
625/50/I	6	625/50/I
1080P/59.94	7	1080I/59.94, 1080P/59.94
1080I/59.54	7	1080I/59.94, 1080P/59.94
720P/59.94	7	1080I/59.94, 1080P/59.94
720P/59.94	7	720P/59.94
1080P/50	7	1080I/50, 1080P/50
1080I/50	7	1080I/50, 1080P/50
720P/50	7	1080I/50, 1080P/50
720P/50	7	720P/50

Mid Plane Module

The Mid Plane Module is the central interconnect module in 4 and 8 RU Platinum VX frames.

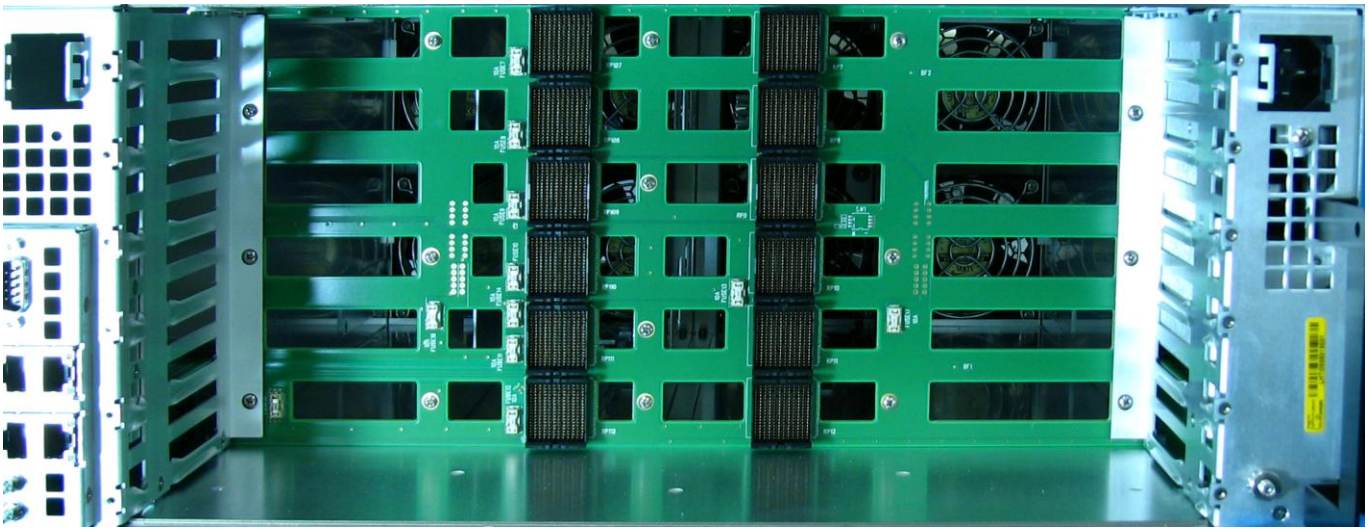


Figure 39: Mid Plane Module in a 4 RU frame

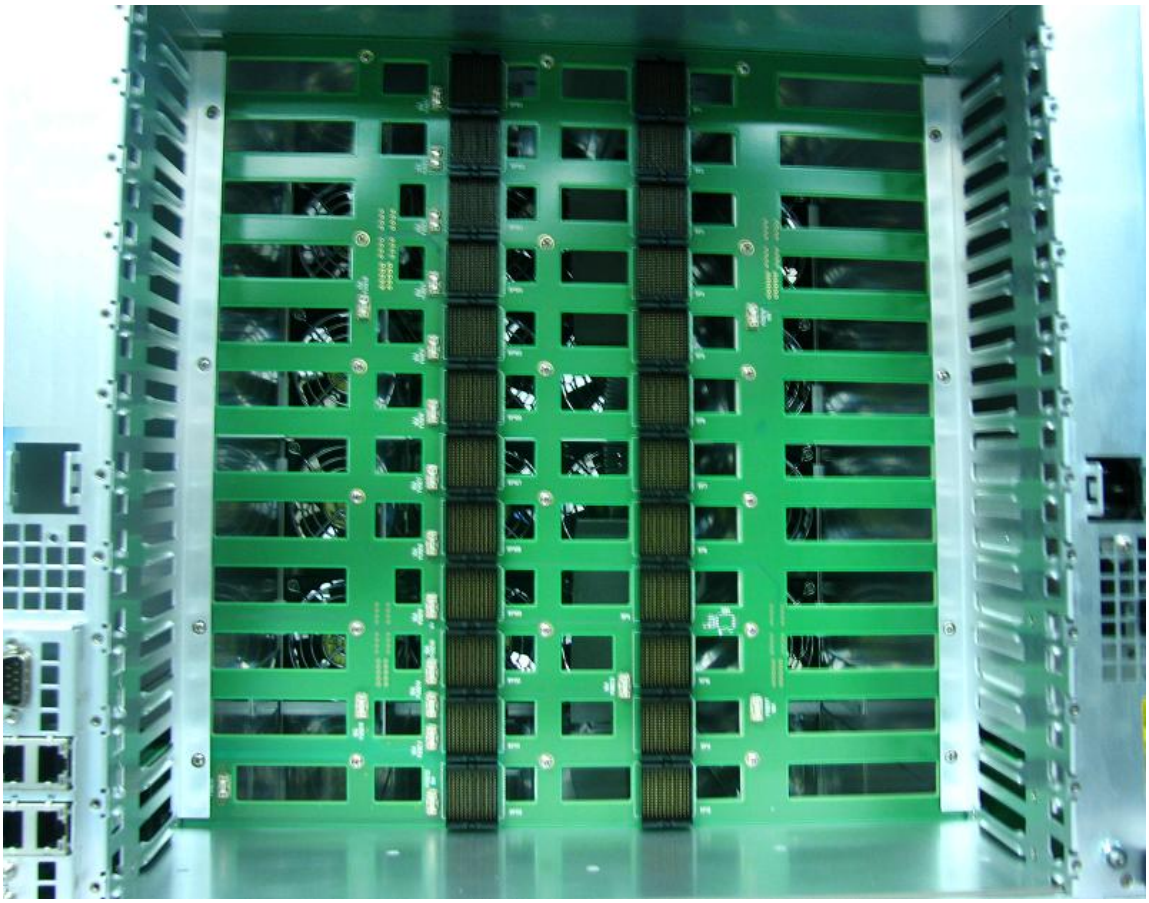
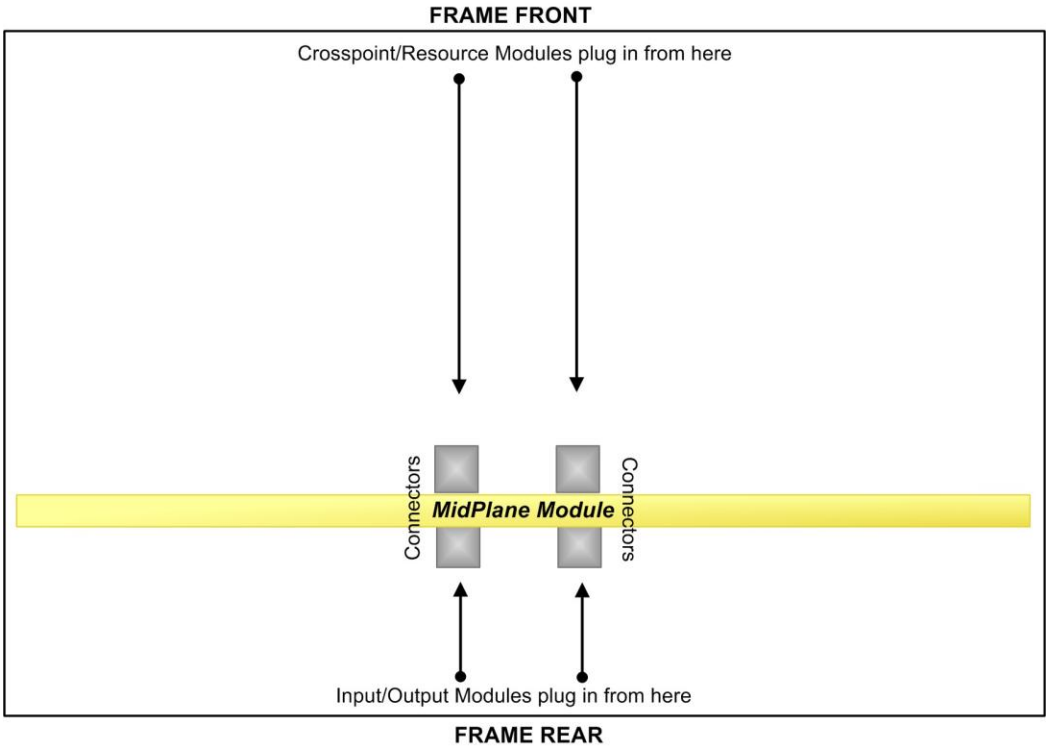


Figure 40: Mid Plane Module in an 8 RU Frame

The Mid Plane Module has sockets on both sides for Crosspoint Modules and Input/Output Modules that plug into it.

Plugs on the edge of the Crosspoint/Resource modules connect to the sockets on the Mid Plane. Crosspoint/Resource modules (in 4 and 8 RU frames) go into the frame vertically, from the front.

Plugs on the edge of the Input/Output modules connect to sockets on the Mid Plane. Input/Output modules go into the frame horizontally, from the rear.



The Mid Plane Module takes the input signal and routes it to the Crosspoint. After processing completes, it re-routes the signals back to the outputs. The Mid Plane is a passive module with no active components, however there are fuses on it. These fuses are to prevent damage to module connectors.

Table 24: Fuses on the Mid Plane Module

	Fuse Type	Fuse Rating	Present on	Part Number
	Fastblow	10 Amps	All Slots	127-100013Q00

Table 25: Mid Plane Module Slots

Slot Type	Number of Slots in 4 RU	Number of Slots in 8 RU
Input Module Slots	6	12
Crosspoint/Resource Module Slots	2	2
Sync Distribution Module Slots	1	1
Fan Control Module	2	4

Platinum VX Power Supplies

The Platinum VX frame comes with two power supplies. The 4 and 8 RU Platinum VX frames come with two 650 Watt AC power supplies, and the 1 and 2 RU Platinum VX frames come with two 12 Volts DC external power supplies. The 4 and 8 RU Power Supplies are referenced as **LEFT** and **RIGHT** and the 1 and 2 RU Power Supplies are referenced as **PS1** and **PS2**.

The Platinum VX frame provides the capability to house two power supplies, however only one is required for full load capability of the frame. When two power supply units are installed in a frame or connected to a frame, they support load sharing between them to reduce power supply unit stress. In the event of a loss of either PS1 (Left) or PS2 (Right) power supply, the alternate power supply will take over.

Even though you have 2 power supplies, depending on whether you choose to use them both (or if you turn on power for one or both), redundancy can be enabled or disabled via the **Redundant Power Supplies** parameter (See Power Supplies Parameters (on page 120)). Set this to **Yes** if you plan to use both power supplies and want to enable redundancy.

For the 4 and 8 RU frames, the bulk of the power (approximately 600W) is used to power the modules in the frame; the other 20W is required for the Frame Cooling Fans and the Front Control Panel, to a total of 650W maximum from any of the combined loads. Cooling for the Power Supply is provided by its internal fan(s) which are temperature controlled and run when the temperature inside the Power Supply requires cooling. This is completely independent of the frame cooling.

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Power Supplies in 4 and 8 RU frames

In case of a 4 or 8 RU frame, the power supply is a fully self-contained and enclosed unit, with rear mounted power inlets and output connectors. The 4 or 8 RU frame comes with two power supplies, located behind access panels on the left and right hand sides of the frame.

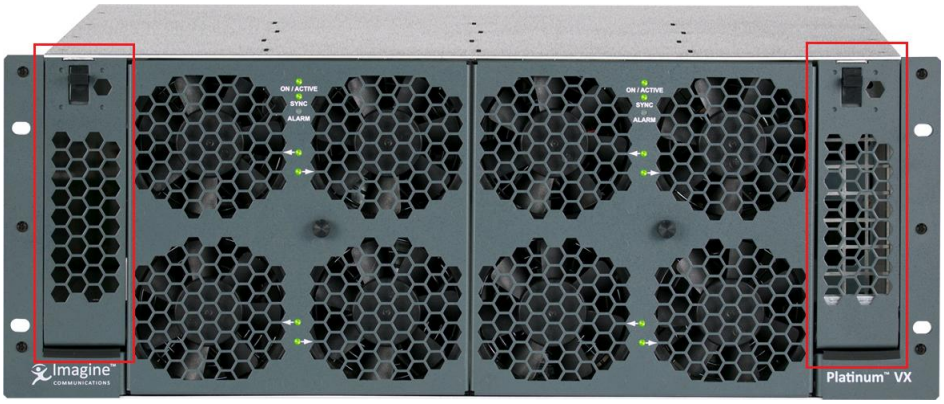


Figure 41: Access Doors to Power Supplies on a 4 RU frame

4/8 RU frames have two power inlets on the rear of the frame for each of the power supplies. One or both may be plugged in, and the power inlets are identified as **LEFT** or **RIGHT**.

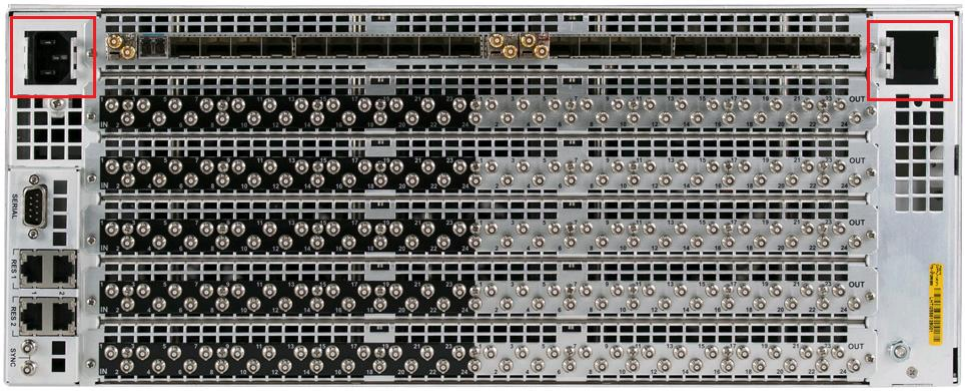


Figure 42: Power Supply Connectors on the Rear of a 4 RU frame

The access panel on the front of the 4/8 RU frame can be easily opened by pressing down on the lever on the top and then pulling the access panel outwards. Once you open the access panel, the power switch and indicators lights are visible. The indicator light will be red if the power supply is present but not connected. It will be be green if power is functioning properly.

Figure 43: With the access panel closed **Figure 44: With the access panel open**

650 Watt AC Power Supply for 4/8 RU frames (PV-PS)

A 650 Watt Power Supply (PV-PS) is used in 4 and 8 RU Platinum VX frames. The AC power supply is rated at 100-240 VAC input, and operates between 90 - 250 VAC.

Table 26: 650 Watt Power Supply Input Specification

Item	Specification
Input Voltage	• Rated: 100 - 240 VAC • Operating: 90 - 250 VAC
Frequency	• Rated: 50 - 60 Hz • Operating: 47 - 63 Hz
Input Current	• Rated: 9 A rms maximum • Operating: 8 A rms maximum at 90 VAC with 650 W output • Operating: 3 A rms maximum at 250 VAC with 650 W output
Inrush Current	40A peak maximum @ High Line, hot or cold start, duration not to exceed 10 ms.
Efficiency	No less than 86% at any net power level greater than 25% of rated output.

Item	Specification
Power Factor	• >0.95 at output power >50% load @ 250 VAC input • >0.95 at output power >30% load @ 90 VAC input • >0.97 at 90 to 135 VAC and >0.95 at 180 to 250 VAC, typical
Harmonic Distortion	Complies with the requirements of EN61000-3-2.

The maximum continuous output power is limited to 650 watts. Should the load exceed the maximum current, or in the event of a short circuit, the power supply will shut down within 110% to 120% of its maximum current rating. It will resume normal operation upon removal of the offending load / short within 1 second of removal of the fault condition, in the absence of any other shut-down conditions, such as thermal.

650 Watt Power Supply Pinouts

Connector Pin Out: Pin No	Pin Type	Name	Description
A1	Signal	I2C ADDR0	Input I2C Address Bit 0 (LSB)
A2	Signal	I2C DATA	Bi-directional I2C Data
A3	Signal	I2C CLK	Input I2C Clock
A4	Signal	ISHARE	Current sharing, connected between both PSUs.
B1	Power Blade (these 8 pins are shorted together)	GND	Ground
B2			
B3			
B4			
C1			
C2			
C3			
C4			
D1	Power Blade (these 8 pins are shorted together)	GND	Ground
D2			
D3			
D4			
E1			
E2			
E3			
E4			
F1	Power Blade (these 8 pins are shorted together)	+12V	Power Rail, +12V
F2			
F3			

F4			
G1			
G2			
G3			
G4			
H1	Power Blade (these 8 pins are shorted together)	+12V	Power Rail, +12V
H2			
H3			
H4			
I1			
I2			
I3			
I4			

Power Supplies in 1 and 2 RU Frames

In case of 1 and 2 RU frames, power supplies are external to the frame, and are supplied by a 160W AC-DC Single Output Desktop Power supply.

On 1 and 2 RU frames, power inlets are identified as PS1 and PS2 and there are two power inlets on the rear of the frame for each of the power supplies. One or both may be plugged in.

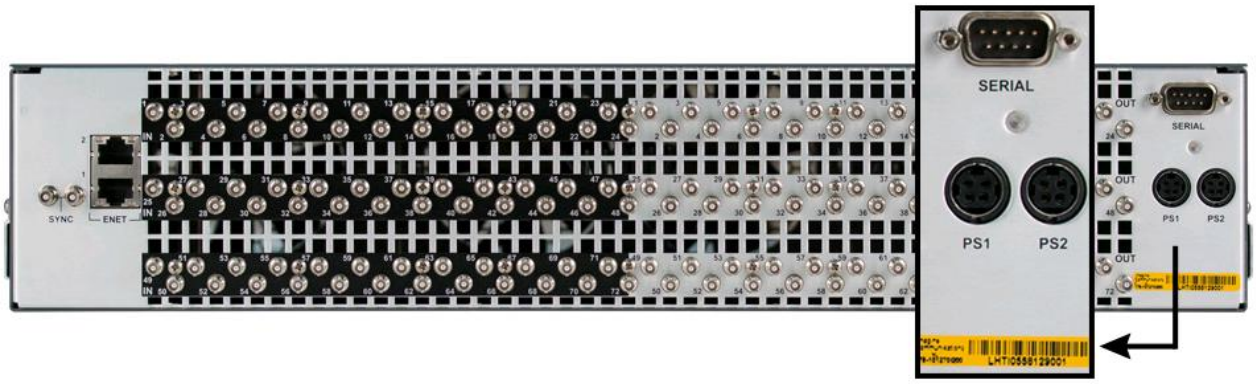


Figure 45: Power Supply Connectors on the Rear of a 2 RU frame

When connecting the power supply cable into the outlet on the frame, ensure you hold down and push back the locking mechanism. Similarly, when removing the cable from the output on the frame, release the locking mechanism and then pull the cable out.

Figure 46: 160 Watt Power Supply for 1/2 RU Frames

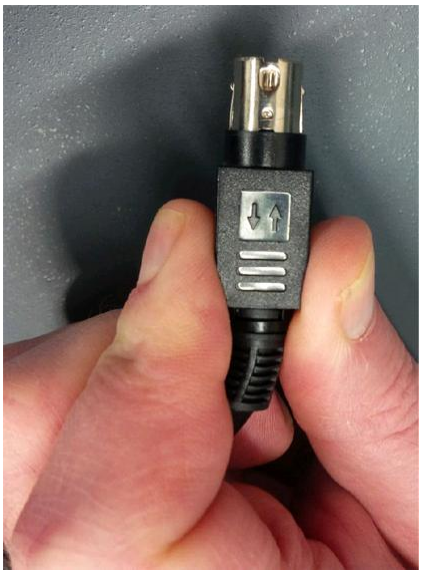


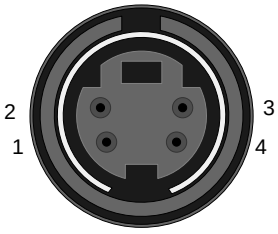
Figure 47: Power Supply Connector

160 Watt AC-DC Power Supply for 1/2 RU frames (122-100051Q00)

Table 27: 160 Watt Power Supply Input Specification

Item	Specification
Input Voltage Range	85 ~ 264VAC 120 ~ 370VDC
Frequency Range	47 ~ 63Hz
Input Current	• Rated: 9 A rms maximum • Operating: 8 A rms maximum at 90 VAC with 650 W output • Operating: 3 A rms maximum at 250 VAC with 650 W output
AC Current	1.85A / 115VAC 1A / 230VAC
Inrush Current	120A / 230VAC
Efficiency	89%
Power Factor	• PF>0.95 / 230 VAC • PF>0.98 / 115 VAC at full load

160 Watt Power Supply Pinouts

	Pin Number	Output
	1, 4	12 +V
	2, 3	12 -V

Power Supply Status on the Frame

1/2 RU frames have power status indicated by the **POWER** LED on the right hand side of the frame. If you don't see a green light, it indicates no power is present or switched on.

Figure 48: Power LED on a 1/2 RU Frame

4/8 RU frames have power status indicated by a red/green light visible through the access door to the power supplies on the left and right hand sides of the frame. If you see a red light, it indicates the power supply is not connected or switched on. If you see a green light, it indicates the power supply is functioning properly.

Figure 49: Power on a 4/8 RU Frame

Power Supply Status on the Dashboard

Status for installed (one or both) power supplies is displayed on the main dashboard in the right hand corner (below the IP Addresses).

- In case of an 4/8 RU frame, power supply status is displayed for **LEFT** and **RIGHT** supplies. This is based on the position they are plugged in, looking at the frame from the front.
- In case of a 1/2 RU frame, the power is indicated by supply - **PS1** and **PS2**. This is to help identify the power supply plug that goes in.

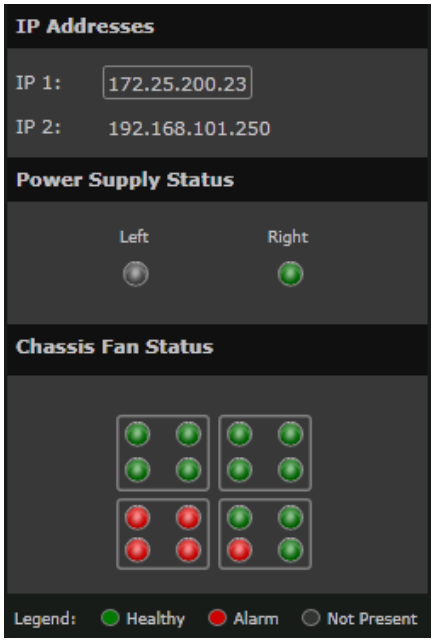


Figure 50: 8 RU Power Status

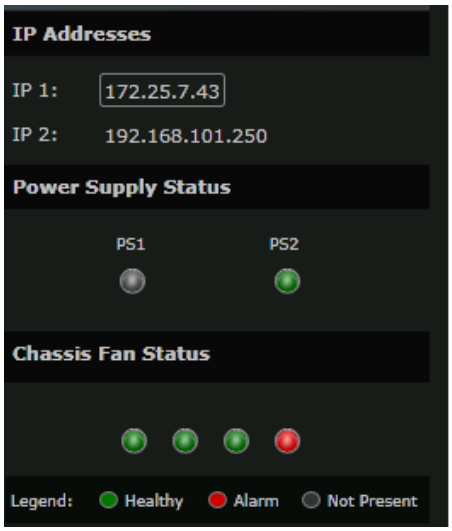


Figure 51: 1/2 RU Power Status

Power Supply Parameters

See Power Supplies Parameters (on page 120).

Clean and Quiet Switching

Clean refers to non-disruptive, glitch-free transition of Video content when switching from one source to another (at the same data- and frame-rate). Quiet refers to audible artefact (pops, clicks) free transition of embedded Audio content when switching from one source another source (at the same data- and frame-rate).

The **PV-CQ16-FR-1** supports a number of mechanisms that can trigger a switch. Switching between sources can be triggered by hardware or software driven events. A TAKE command from a Magellan Remote Control Panel (RCP) can also trigger a switch.

Note: Two signals routed to the same clean quiet switch must be the same standard. The output of switching between two mismatched signals may be unexpected, and will not be clean and quiet.

See Program and Preview Outputs (on page 75) and SFP Relay Bypass (on page 77)

For more details on the **PV-CQ16-FR-1**, see:

- PV-CQ16-FR-1 User Interface Platinum VX Dashboard (on page 84)
- PV-CQ16-FR-1 Frame Contents Frame Specific Details (on page 88)
- Main module in the frame PV-32x32 Modules (see "PV-32x32 Modules (1 RU and 1 RU CQS frames)" on page 95)
- CQS module in the frame CQS Modules (see "PV-CQ16 Modules (CQS Modules)" on page 97)
- Spec for Supported SFPs in a CQS Frame Supported SFP Specifications (on page 34)
- CQS Parameters CQS Parameters (on page 107)
- Configuring the CQS Module CQS Module Configuration (on page 126)

Note: If you intend to use a Magellan (RCP) panel to control your Platinum VX router, see the Magellan RCP 3.6 User Manual for instructions on how to configure clean and quiet switching for a Platinum VX controlled by a Magellan panel.

Program and Preview Outputs

The Platinum VX CQS frame has the following input and outputs:

Inputs	Outputs	Connected To
1-16	1-16	External BNC Connectors
17-32	17-32	External SFP Connectors

The CQS module in the frame consists of two 2x2 clean and quiet switches, with the **Program Output** as one output of the switch, and **Preview** as the second output.

- The **Program Output** provides a continuous error-free stream. In the event of signal loss, a black or frozen signal is generated at this output. Switching between the two input sources to the program output is carried out by transitioning from one source to another with user specified transition type and duration.

- The **Preview Output** acts as the preview of the source which will be switched to the program output. There may be disruptions in the stream. Any video or audio processing such as frame delay, audio gain, etc. applied to the program output will also apply to the preview output.

  When the Resource Module (PVX-RES) receives a command to route a source to the program output, it routes the source to the preview output first and then starts the transition of the source to the program output.

When the Program Output destination button is selected, sources change immediately on the preview bus as they are selected on the panel. Once the desired source has been located, pressing "take" on the control panel initiates the predetermined transition from the source selected as the current output on the program bus to the newly selected source. The state of the preview output is selectable in the setup menus (CQS 1/2 Transition Mode Setup parameter) to continue to display the last selected source (set to Copy) or it can be programmed to change to indicate the source that was formerly on the program output before the transition (set to Swap).

The clean/quiet switch on the Platinum VX CQS frame can be achieved on two program outputs (*Program 1 on SFP output 28 and Program 2 on SFP output 32*).

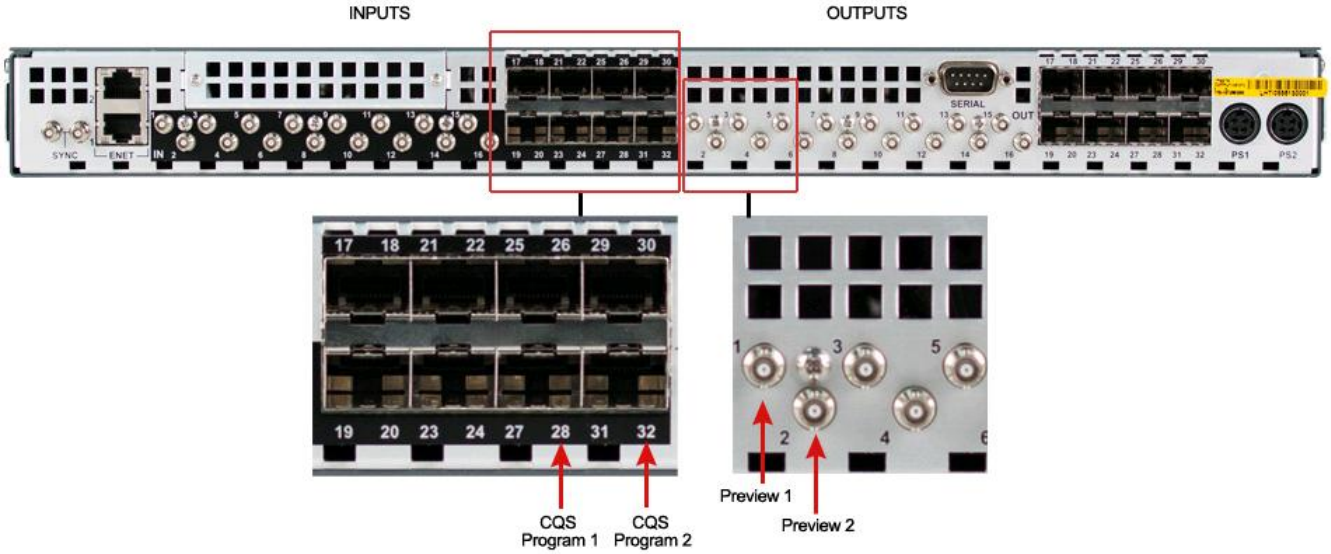


Figure 52: Program and Preview outputs on the Platinum VX CQS

Internally, the 1 RU Platinum VX CQS module has the following default **Output to Program** assignments.

Output	Type	Assigned To
28	SFP	Program 1
32	SFP	Program 2
1	BNC	Preview 1
2	BNC	Preview 2

SFP Relay Bypass

The Platinum VX CQS frame has 2 SFP modules (SFP+ETRX+BP) that come with the frame. These 2 SFP Relay bypass modules are provided on the SFP input side (Slots 27-28 and 21-32), to avoid program output interruption in the event the frame loses power.

- **SFP Inputs** on the the relay bypass module are **Inputs #27 and #31**
- **SFP Outputs** on the the relay bypass module are **Outputs #28 and #32**

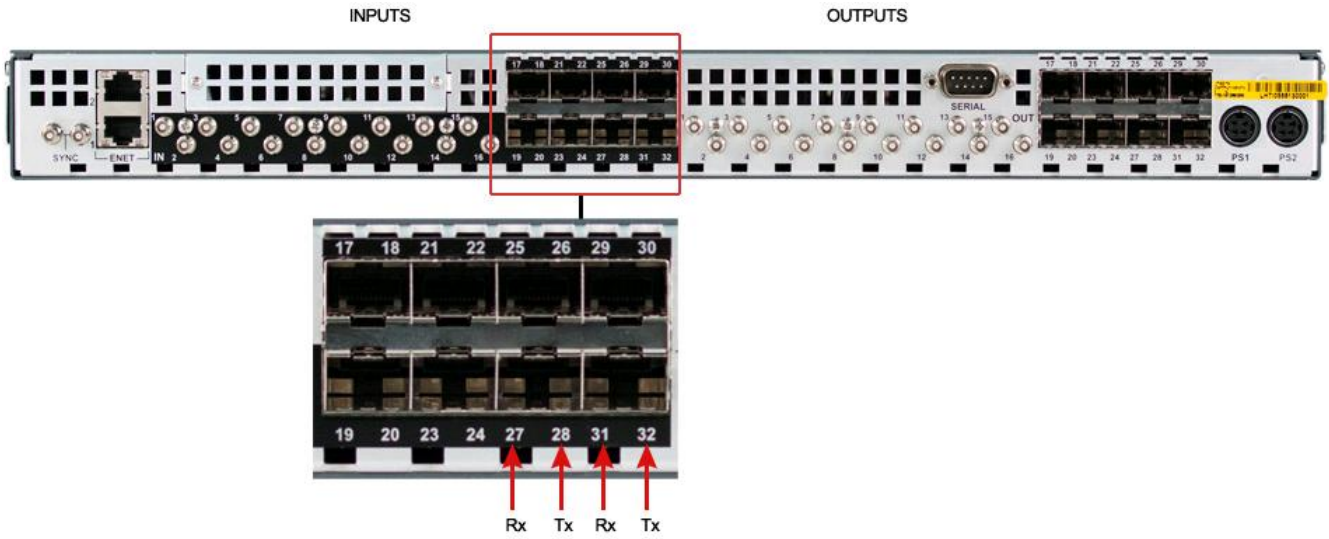


Figure 53: Relay Bypass on the Platinum VX CQS

If SFP relay bypass modules are detected on input side, SFP output slots 27-28 and 31-32 are disabled.

The expected behavior for the SFP relay bypass module is as follows:

- **Power Loss Setup:** The user provides a stream for power loss, and connects that stream to the SFP relay bypass module's input port.
- **Power Loss:** When frame power is lost, the program output in the SFP relay bypass module immediately connects to its input signal. This is non clean and quiet switch and a glitch is to be expected.
- **Power Restoration:** After power is restored to the frame, the output will initially still be the power-loss signal, and will be switched to the real program signal only after the CQS module boots up and routing before power lost is recovered. This transition is also a non clean and quiet switch.

PV-CQ16-FR1 Genlock Specifications

Reference Standard	Video Standard		Reference Standard	Video Standard
525/59.94I	525/59.94/I		**625/50/I**	1080I/50
	1080I/59.54			1080P/50
	1080P/59.94			720P/50
	720P/59.94			625/50/I
1080I/59.94	1080P/59.94		**720p/59.94**	720P/59.94
	1080I/59.54			
	720P/59.94			
1080I/50	1080P/50		**720P/50**	720P/50
	1080I/50			
	720P/50			

Platinum VX Control Features

See Platinum VX Client Overview (on page 82)

Platinum VX Power Consumption

Table 28: Platinum VX Power Consumption

	1 RU	1 RU (CQS)	2 RU	4 RU	8 RU
16 x 16 (1 RU only)	36W	N/A	N/A	N/A	N/A
48 x 48 (2 RU only)	N/A	N/A	50W	N/A	N/A
72 x 72 (2 RU only)	N/A	N/A	70W	N/A	N/A
72 x 72 (2 RU with SFP)	N/A	N/A	90W	N/A	N/A
All HD-BNC modules (4/8 RU)	N/A	N/A	N/A	110W	490W
All SFPs loaded in SFP Slots	48W	100W	N/A	190W	635W
Without SFPs	N/A	65W	N/A	N/A	N/A

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Alarms and LEDs

System LEDs

3 LEDs on the frame indicate Crosspoint Control and System Status. If the Alarm LED is on, it indicates a system level problem such as a fan failure.

Figure 54: System LEDs on 1/2 RU Frames

Figure 55: System LEDs on 4/8 RU frames

Table 29: System LEDs

LED	Applicable Frames	Color	Description	Alarm Level
ON / Active LED	4/8 RU	Green	Crosspoint is powered	Informational
		Amber	Active Crosspoint	Informational
Sync LED	All	Solid ON	Sync reference is present.	Informational
Alarm LED	All	Red	This LED is enabled: • When the Resource Module (PVX-RES) is in failsafe mode (solid red) • During LLDC identification (flashing red)	Informational
Power	1/2 RU	Green	Frame is powered	Informational

Platinum VX Client Overview

The Platinum VX Client is a web-based tool for configuration and operation of your Platinum VX router. It provides support for configuration, status, and alarm management of the routing system.

System and Network Requirements

The following are requirements for the PC used to monitor and control a Platinum VX:

- Operating System: Windows 7, Windows 8/8.1
- JavaScript enabled web browser; Microsoft Internet Explorer 8.0 or higher
- Silverlight version 5.0 or higher

Platinum VX Web UI

The Platinum VX Web UI is Silverlight based, so your Browser must meet the minimum requirements specified for support of Microsoft Silverlight 5.0 or higher.

> **Note:** Ensure the appropriate Silverlight version is used based on the Operating System running on the PC, be it 32-bit (x86) or 64-bit (x64). The officially supported browser is Internet Explorer 10 or 11.

Platinum VX IP Address

The Platinum VX ships with a pre-configured (ENET 1) IP Address - **192.168.100.250**. Use this IP Address to log into the system through the Silverlight UI and then change the IP Address if required.

Supported Network Protocols

The Platinum VXsupports the following network protocols for remote/network control:

- HTTP
- CCS Protocol (via Magellan Remote Control Panels)

Features

Dashboard View with System Information and Status	Dashboard Overview (on page 83)
Parametric Device Control for Modules	Modules in the Frame (see "Modules/Components in the Frame" on page 90)
Frame Specific Parameters	Frame Specific Parameters (on

	page 115)
System Configuration and Monitoring	Configuration Dashboard (on page 133)
Database Functions	Database Foundry (on page 135)
Upgrades for Resource Modules	Firmware Foundry (on page 146)
Access Rights	User Foundry (on page 149)
Faults View	Faults View (on page 130)
Fault Log	Fault Log (on page 131)

Dashboard Overview

The Platinum VX dashboard provides:

- A Physical view of the defined Routing system
- A List View of Modules
- Visual Alarm Status

For more details, see Navigation (on page 84).

Configuring the Platinum VX System

See Configuration Dashboard (on page 133) for details on setting up the Platinum VX system.

Accessing the Interface

Log into the Platinum VX system by opening a web browser and entering the IP Address of the Platinum VX. The home page displays a dashboard from where you can configure, view, and monitor different elements of your system.

Navigation

Platinum VX Dashboard

Accessing the Web interface for a Platinum VX frame displays a dashboard with details on the Frame Name, Type, IP Address, Status, Faults, Power Supply Status, Chassis Fan Status and so on. There are also links to **Configure the System** (See Configuration Dashboard (on page 133)) and to view the **Fault Log** (See Fault Log (on page 131))

Figure 56: Dashboard for an 8 RU Platinum VX

Figure 57: Dashboard for a 2 RU Platinum VX with SFP (PV-72SFP-FR-2)

Figure 58: Dashboard for an 1 RU Platinum VX with CQS (PV-CQ16-FR-1)

Table 30: Platinum VX Dashboard

Key	Label	Description
1	List View	Physical view of the overall system (Default view)
2	Faults View	An overview of components/modules with faults and links to open, disable, or acknowledge faults. See Faults View (on page 130).
3.	Faults Log	Link to the Fault Log (on page 131) that opens in a new window.
4.	Configure System	Links to configure the system and perform functions related to Firmware Management, and User Accounts. See Configuration Dashboard (on page 133).
5.	Help	Link to the User Manual
6.	Alarms	Active System Faults. See the Faults Tab (Faults View (on page 130)) for details.
7.	Frame Details	Platinum VX Frame details along with IP address, firmware versions, resource card information, and fault information. See Frame Specific Details (on page 88).
8.	IP Addresses	Defined in Manage Controller Settings (on page 134).
9.	Power Supply Status	Indicators for power supplies. See Power Supply Status on the Dashboard (on page 74)
10	Fan Chassis Status	Fan supply status categorized by location (front top, front bottom, rear). See Chassis Fan Status on the Controller Dashboard (on page 48).

Parametric Control

Read-Only (Status Parameters)

Read-only or status parameters feed back the current state of a specific parameter.

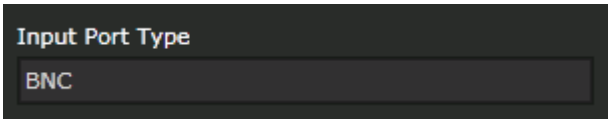


Figure 59: Example of a Read-Only Parameter

List Parameters

List parameters contain a series of possible values for a specific parameter. Enumeration and string-list parameter changes are always delayed. List parameters are identifiable by the arrow in the right corner of the button. When you roll the mouse over a list parameter, the button highlights, and when you click the arrow, available options are displayed. Select an item in the list to set the value for this parameter.I'l

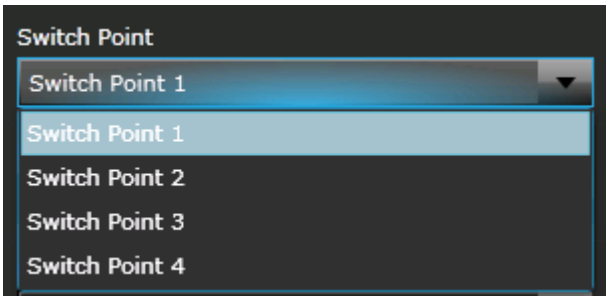


Figure 60: Example of a List Parameter

Range Parameters

A range parameter uses an incremented slider to choose a value from all available values. Numeric parameter values are represented by a sliding bar on the display screen. A progress bar indicates where the current value is within the entire range the parameter presents. The current value is shown at the right of the progress bar.

You can control the editable parameters by entering values, selecting options from drop down lists, or in some cases by dragging a slider to the appropriate value.

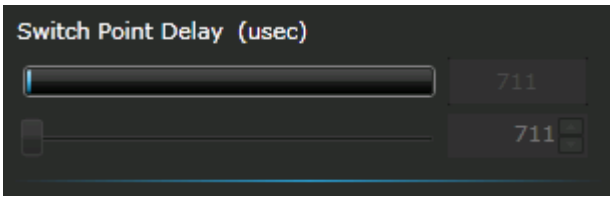


Figure 61: Example of a Range Parameter

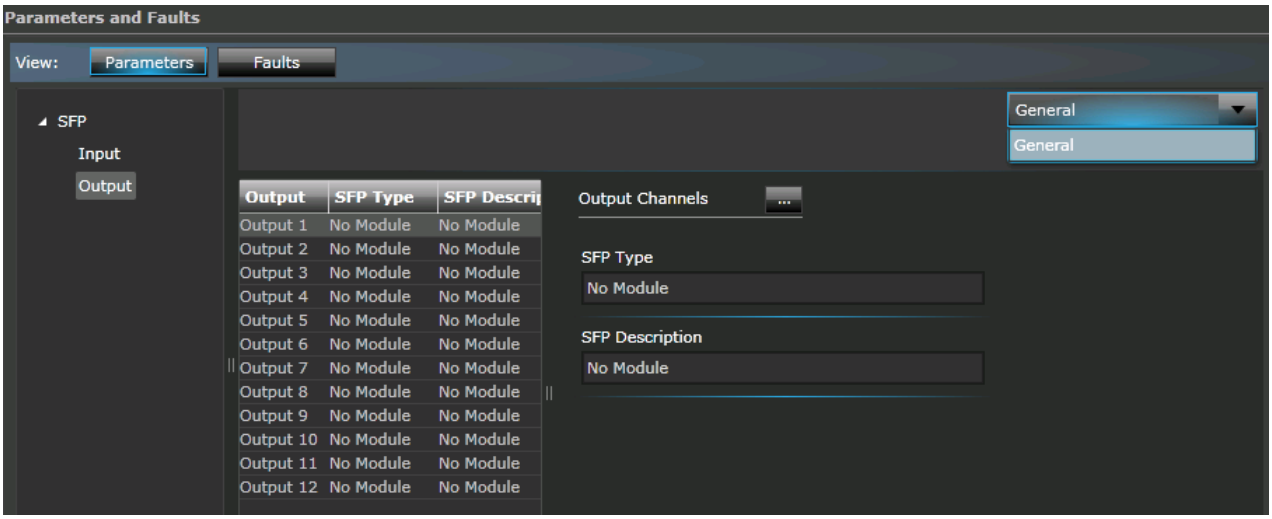
Table Parameters

Table parameters provide an interface to view a large number of settings in a single screen, linking multiple instances of the same parameter or series of parameters.

Note: In cases where the same set of parameters apply for multiple channels (such as Inputs or Outputs), parameters are grouped under a single table, accessible through a **Show Table** Link listed against that option.

The screen is divided into three panes:

- The module and its Input/Output categories on the left
- Instances in the middle (for example 12 outputs for the SFP module)
- Parameter fields to the right



You can drag the divider between these panes to expand and contract the view. You will see multiple rows corresponding to multiple channels. In this case, 12 rows are displayed for each of the 12 outputs for the SFP module. Menu options in the drop down list in the top right hand corner.

To change a table parameter:

1. Select a row (input) from the middle section. The Parameter pane updates to display the options and current settings for that row. By default, the parameter pane displays parameters for the first row in the table. The top right corner of the screen updates to indicate the row the parameters are for.
2. Select the parameter you want to change.

Frame Specific Details

When you click the **Go to Frame** button on the main dashboard, the contents of the frame are displayed.

4/8 RU Frames

In case of 4 and 8 RU frames, individual modules are displayed (See BNC Input/Output Modules (4/8 RU Frames) (on page 91) and SFP Input/Output Modules (4/8 RU Frames) (on page 92)).

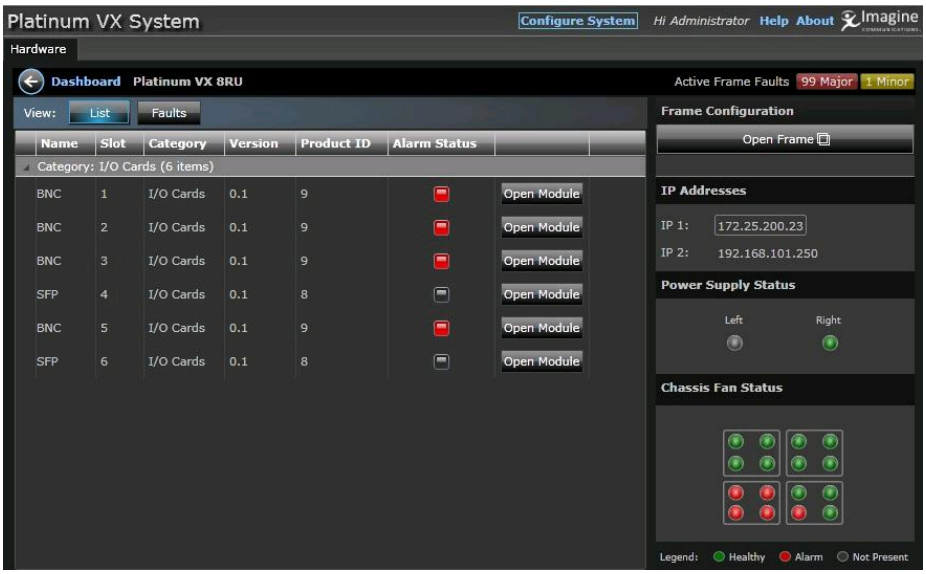


Figure 62: 8 RU Frame Dashboard

1/2 RU Frames (PV-16X16-FR-1/PV-48X48-FR-2/PV-72X72-FR-2)

1 and 2 RU frames display one main board (See PV-32x32 Modules (1 RU and 1 RU CQS frames) (on page 95) and IO-72x72/IO-48x48 (2 RU Frames) (on page 92)).

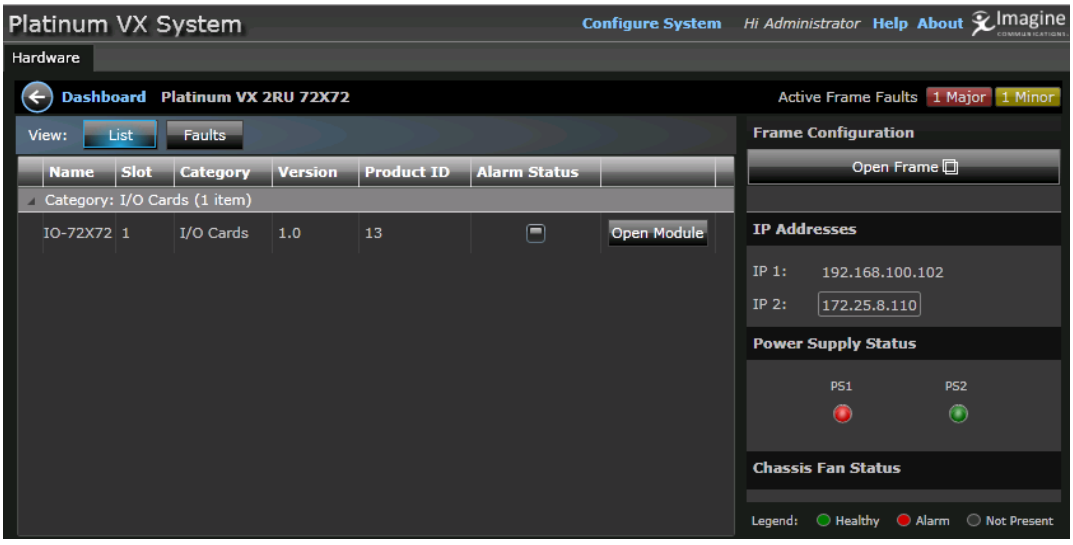


Figure 63: 2 RU Frame Dashboard

1 RU Clean and Quiet Frame (PV-CQ16-FR-1)

1 RU Clean and Quiet frames (PV-CQ16-FR-1 frame) display 2 modules: the main board (PV-32x32 Modules (1 RU and 1 RU CQS frames) (on page 95)), and the Clean and Quiet sub board (PV-CQ16 Modules (CQS Modules) (on page 97)).

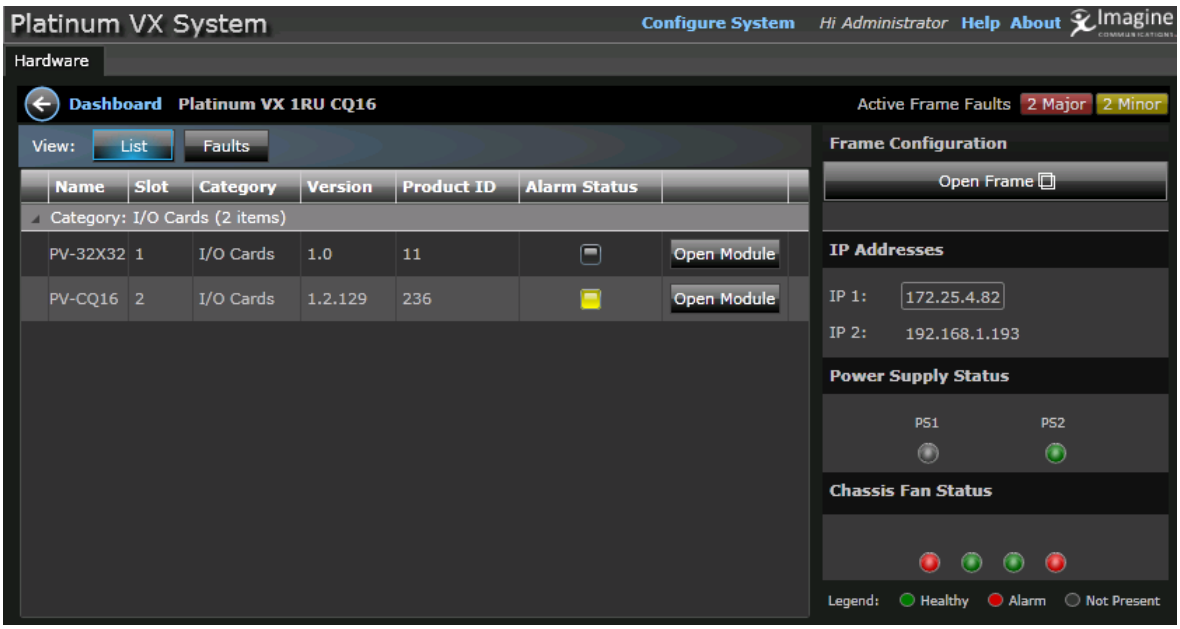
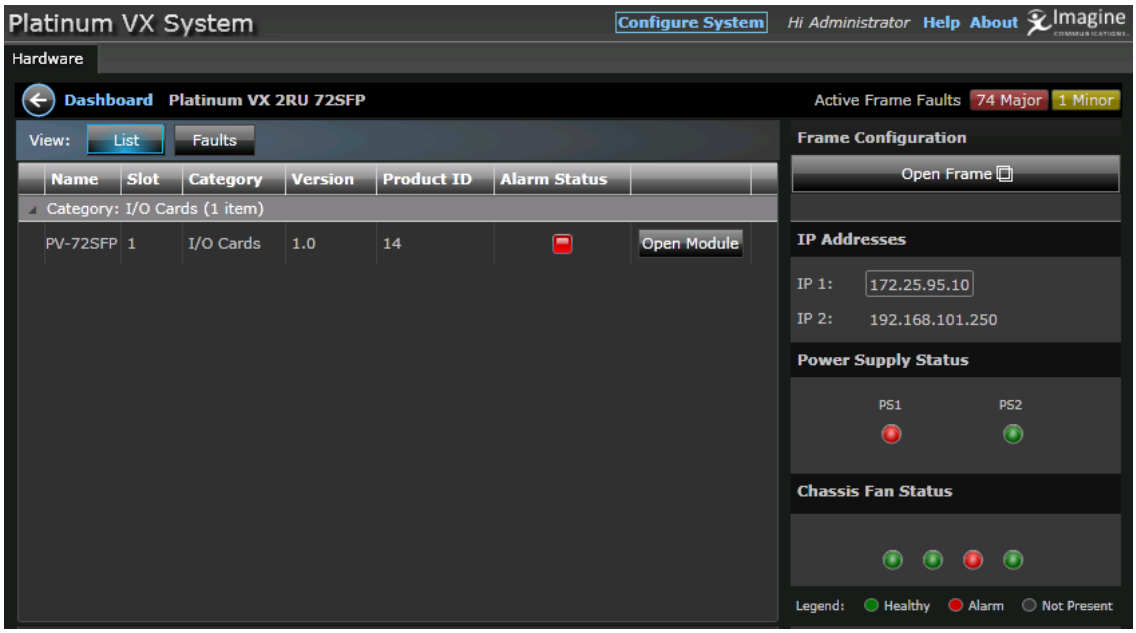


Figure 64: 1 RU CQS Frame Dashboard

2 RU SFP Frame (PV-72SFP-FR-2)

2 RU SFP frames (PV-72SFP-FR-2 frame) display 1 module: the main board (See PV-72SFP Modules (2 RU SFP frame) (on page 94).



For all frame types, a complete snapshot of the frame content is displayed, including:

- Modules in the Frame (see "Modules/Components in the Frame" on page 90)
- Module Faults
- Frame Specific Parameters (on page 115)
- Frame Faults
- Power Supply and Chassis Fan Status

Modules/Components in the Frame

Module specific details are displayed in the main area. The following details are displayed per component:

- **Name**: The type of card. For example, BNC or SFP or CQS
- **Slot**: The slot the card resides in
- **Category**: The type of card - Input/Output, Crosspoint, Control
- **Version**: The firmware version running on the card
- **Product ID**: The ID for the module
- **Alarm Status**: Red (major), Yellow (minor), Blank (healthy)
- **Open Module**: Click to go to a specific card/module and view details. See Module Details (on page 90).

Module Details

When you click the **Open Module** button against a module in the Frame View, Module details are displayed in a window superimposed over the previous frame window.

- In case of 4/8 RU frames, the Module window displays ALL of the modules of the same type as the one that you selected (these would be either BNC Input/Output Modules (4/8 RU Frames) (on page 91) or SFP Input/Output Modules (4/8 RU Frames) (on page 92)
- In case of 1/2 RU Frames, the built in components are displayed (IO-72x72/IO-48x48 (2 RU Frames) (on page 92), PV-27SFP Modules (2 RU SFP frame) (see "PV-72SFP Modules (2 RU SFP frame)" on page 94) or PV-32x32 Modules (1 RU and 1 RU CQS frames) (on page 95)

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The following details are displayed:

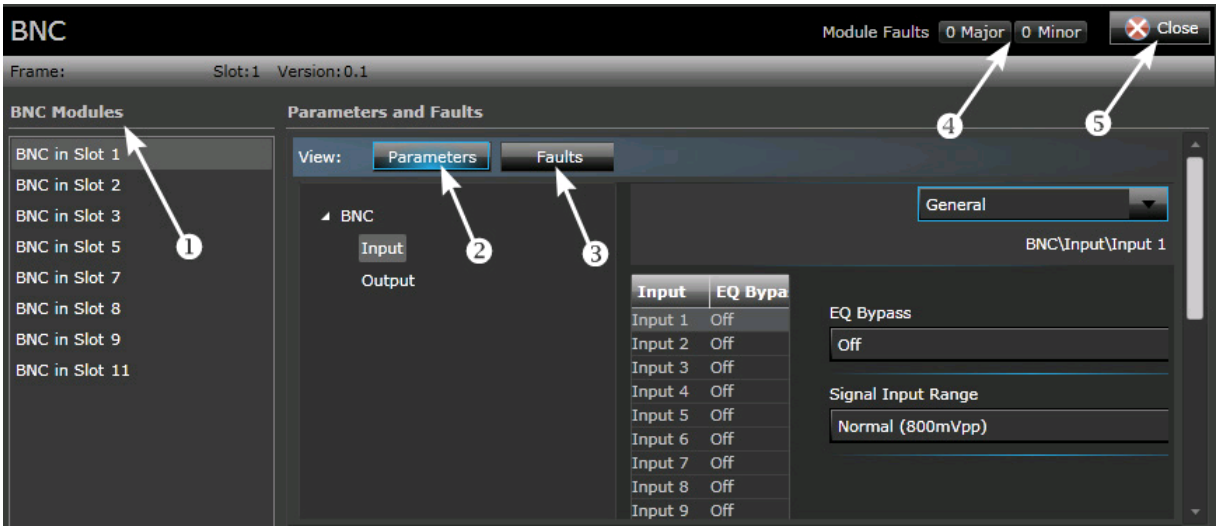


Figure 65: Module Details

1	Modules List	The first column displays the name of the selected module (and the slot it is in), and lists other modules of the same type in the frame, if present. You can access details of other similar modules by clicking on them in the list. When you select a module in this list, information on the frame it belongs to, the slot, version, and serial number is dynamically updated in the header at the top, and parameters are displayed on the right.
2	Module Parameters	Displays parameter categories/menus and individual parameters for the selected module. Parameter options can be changed using the GUI. See Parametric Control (on page 86).
3	Module Faults	Displays any existing faults (and related details) for the selected module. See Module Faults
4	Faults Overview	The number of major and minor faults for the module are displayed at the top.
5	Close Button	You can close the Module window at any time by clicking the **Close** button at the top right hand corner of the screen.

BNC Input/Output Modules (4/8 RU Frames)

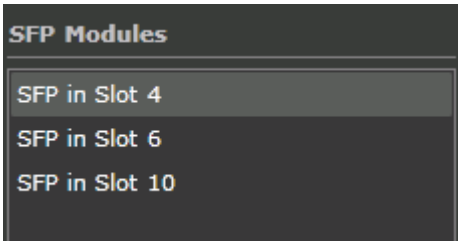
BNC Module details are displayed when you click the **Open Module** button against a BNC Module in the Modules Dashboard View.

A list of all BNC Modules in the frame along with the slot they're in is displayed on the left. To the right, you see Parameters for that BNC Module, categorized by **Input** (see BNC Module Input Parameters (on page 99)) and **Output** (see BNC Module Output Parameters (on page 100)).

SFP Input/Output Modules (4/8 RU Frames)

SFP Module details are displayed when you click the **Open Module** button against an SFP Module in the Modules Dashboard View.

A list of all SFP Modules in the frame along with which Slot they're in is displayed on the left.

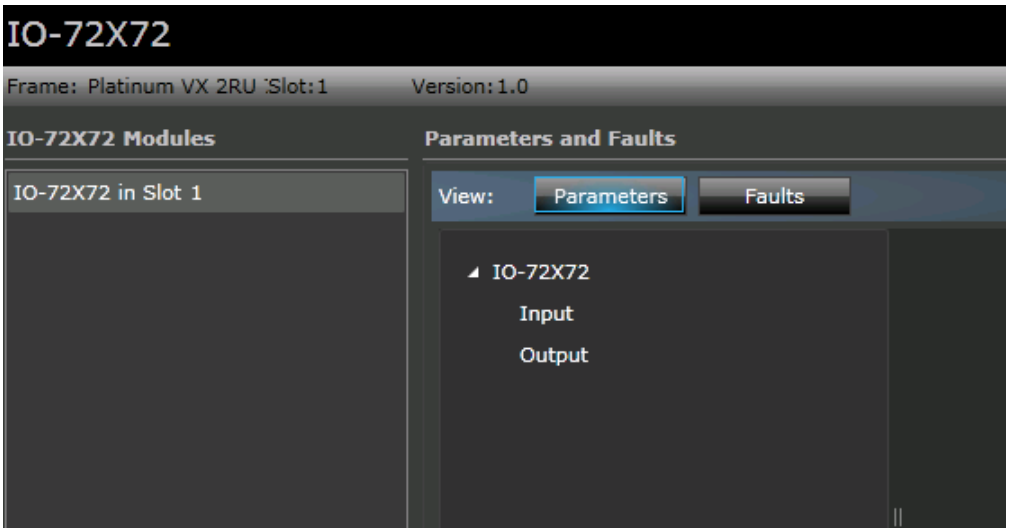


To the right, you see Parameters for that SFP Module, categorized by:

- **Input** (see SFP Module Input Parameters (on page 101))
- **Output** (see SFP Module Output Parameters (on page 103)).

IO-72x72/IO-48x48 (2 RU Frames)

2 RU PV-48X48-FR-2 and PV-72X72-FR-2 frames don't have individual modules. A single main board IO-72x72/IO-48x48 is displayed when you click the **Go to Frame** button on the main dashboard.

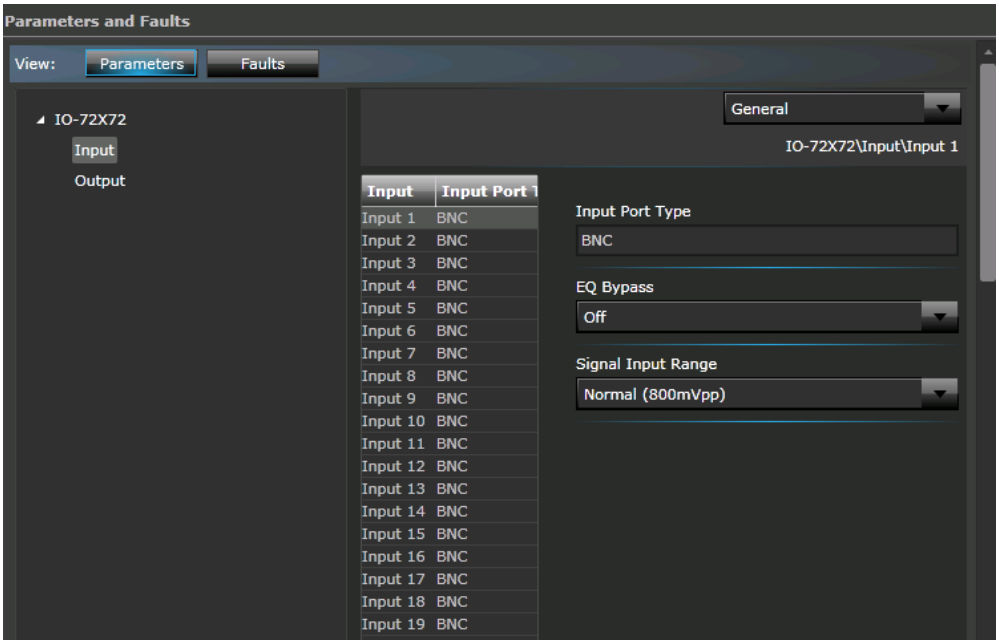


The frame has either 48 or 72 inputs and outputs and parameters for these are displayed to the right, categorized under **Input** and **Output** menus.

INPUTS

Under **Inputs**, the Input Port Type column displays information for:

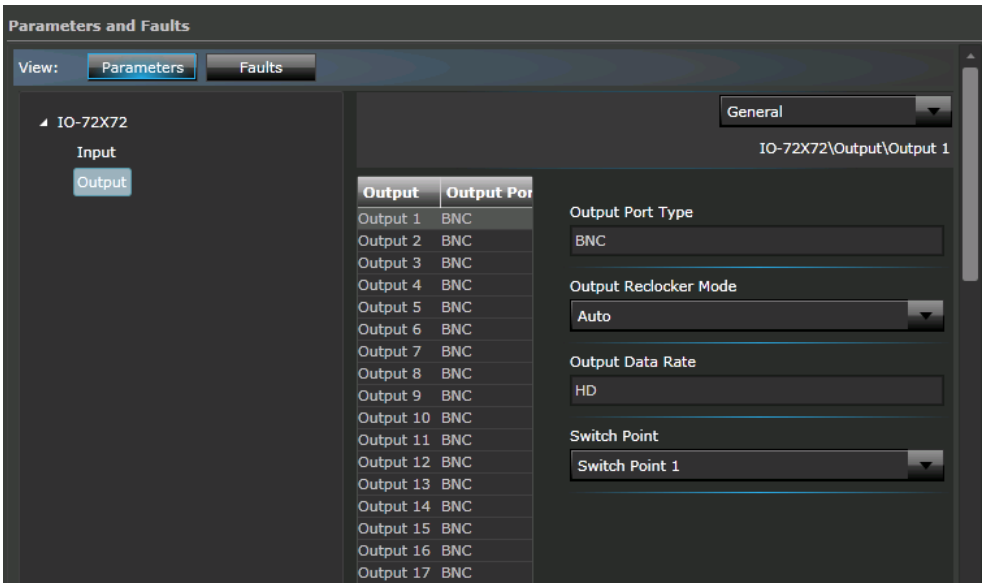
- **BNC** in input slots 1-48 or 1-72
  (For BNC parameters, see BNC Module Input Parameters (on page 99))



OUTPUTS

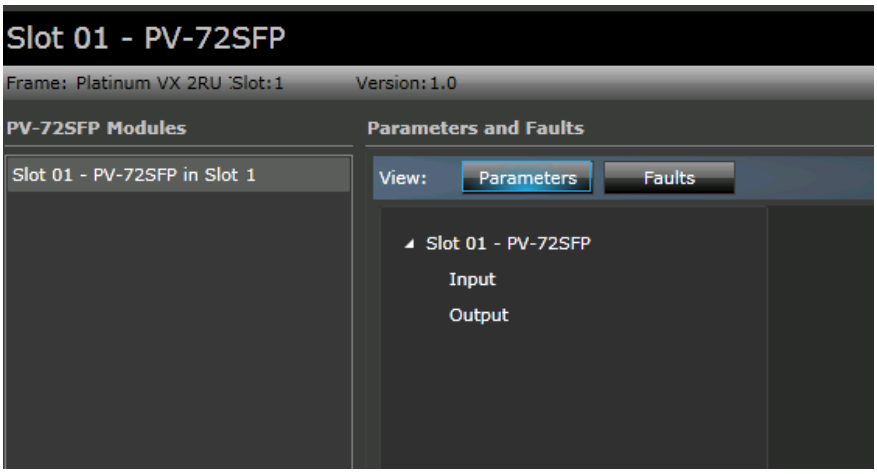
Under **Outputs**, the Output Port Type column displays information for:

- **BNC** in output slots 1-48 or 1-72
  (For BNC parameters, see BNC Module Output Parameters (on page 100))



PV-72SFP Modules (2 RU SFP frame)

The 2 RU SFP Frame (**PV-72SFP-FR-2**) doesn't have any individual modules. A single main board PV-72SFP with 72 inputs and outputs is displayed when you click the **Go to Frame** button on the main dashboard.



Parameters for inputs/outputs are displayed to the right, categorized under **Input** and **Output** menus.

INPUTS

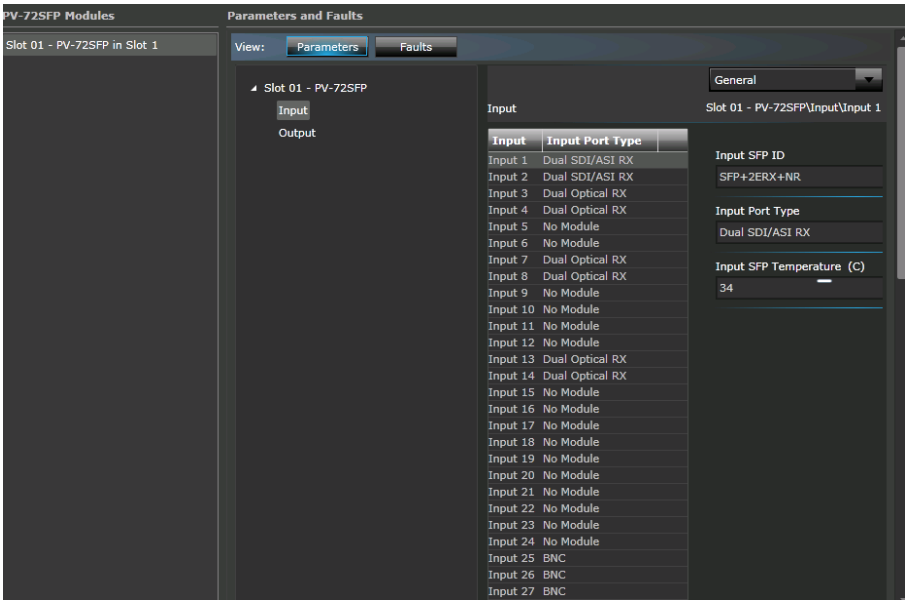
Under **Input**, the Input Port Type column displays information for:

- **SFPs** in input slots 1-24

  Note: If there is no SFP plugged in, *Input Port Type* will display *No Module*.
  For SFP parameters - displayed depending on the type of SFP inserted - see SFP Module Input Parameters (on page 101). Also see Supported SFP Specifications (on page 34).

- **BNC** in input slots 25-72

  Note: For BNC parameters, see BNC Module Input Parameters (on page 99).



OUTPUTS

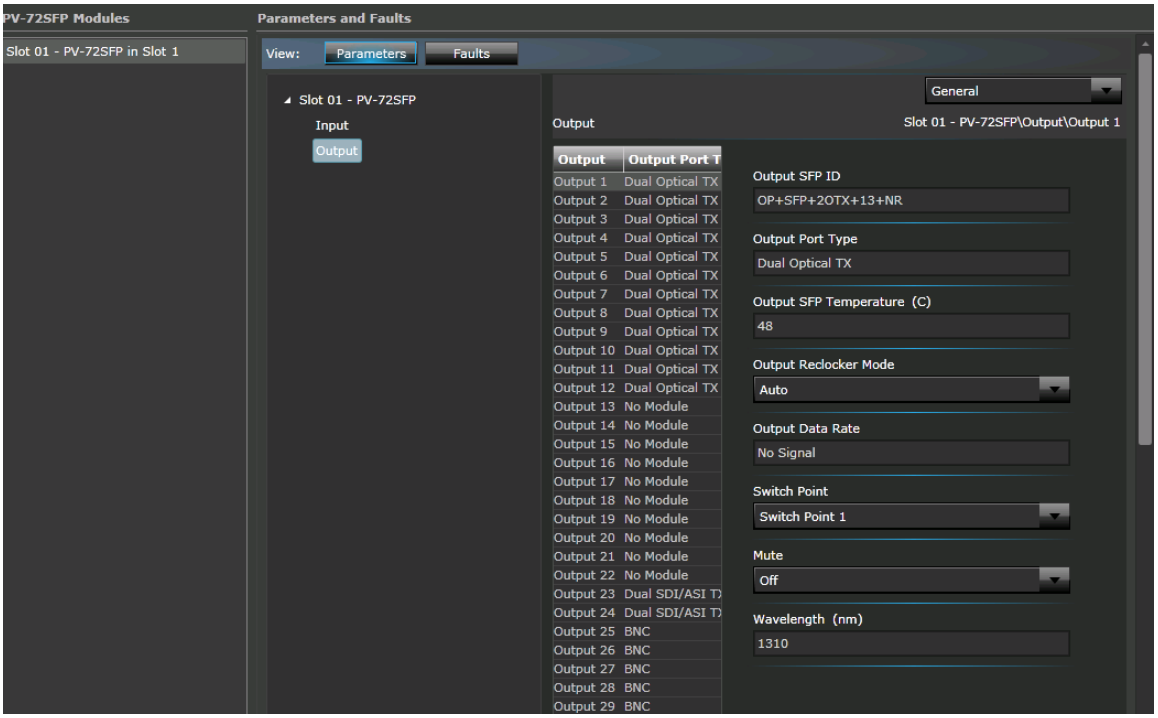
Under **Outputs**, the Output Port Type column displays information for:

- **SFPs** in output slots 1-24

  Note: For SFP parameters - displayed depending on the type of SFP inserted - see SFP Module Output Parameters (on page 103)). Also see Supported SFP Specifications (on page 34).

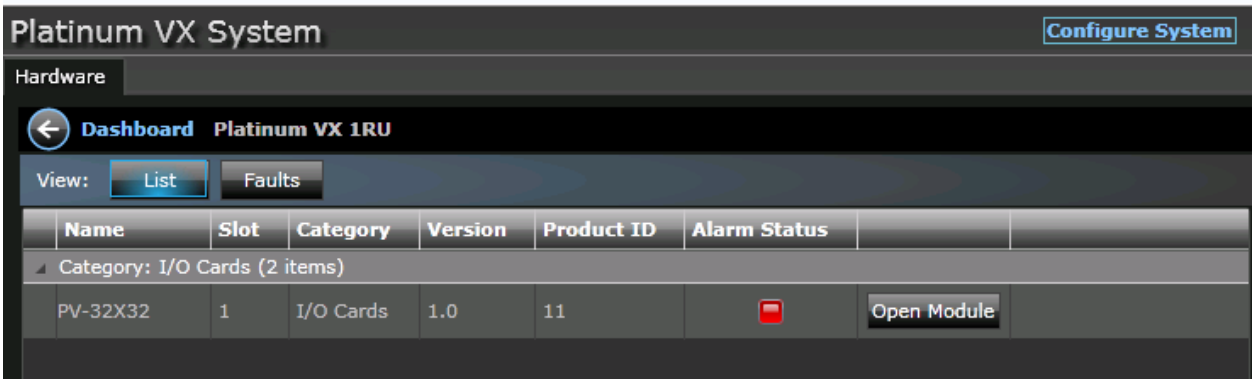
- **BNC** in output slots 25-72

  Note: For BNC parameters, see BNC Module Output Parameters (on page 100).

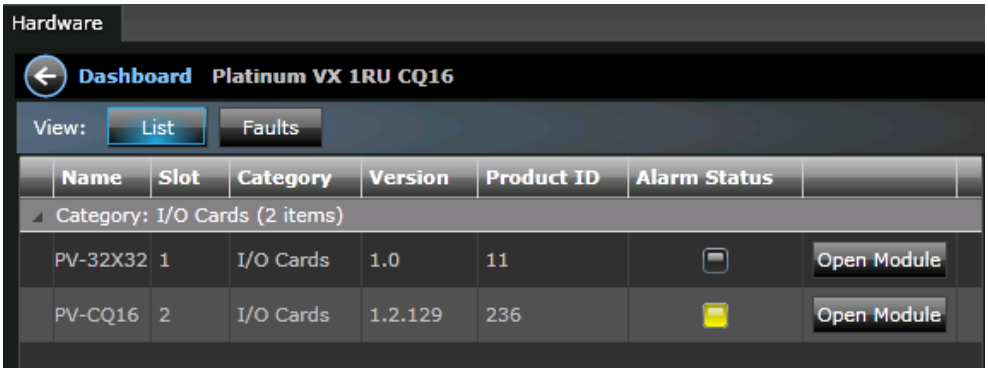


PV-32x32 Modules (1 RU and 1 RU CQS frames)

In a 1 RU (PV-16X16-FR-1), a single PV-32x32 component is displayed when you click the **Go to Frame** button on the main dashboard.



A 1 RU CQS frame (PV-CQ16-FR-1) displays a CQS Module (PV-CQ16) in addition.

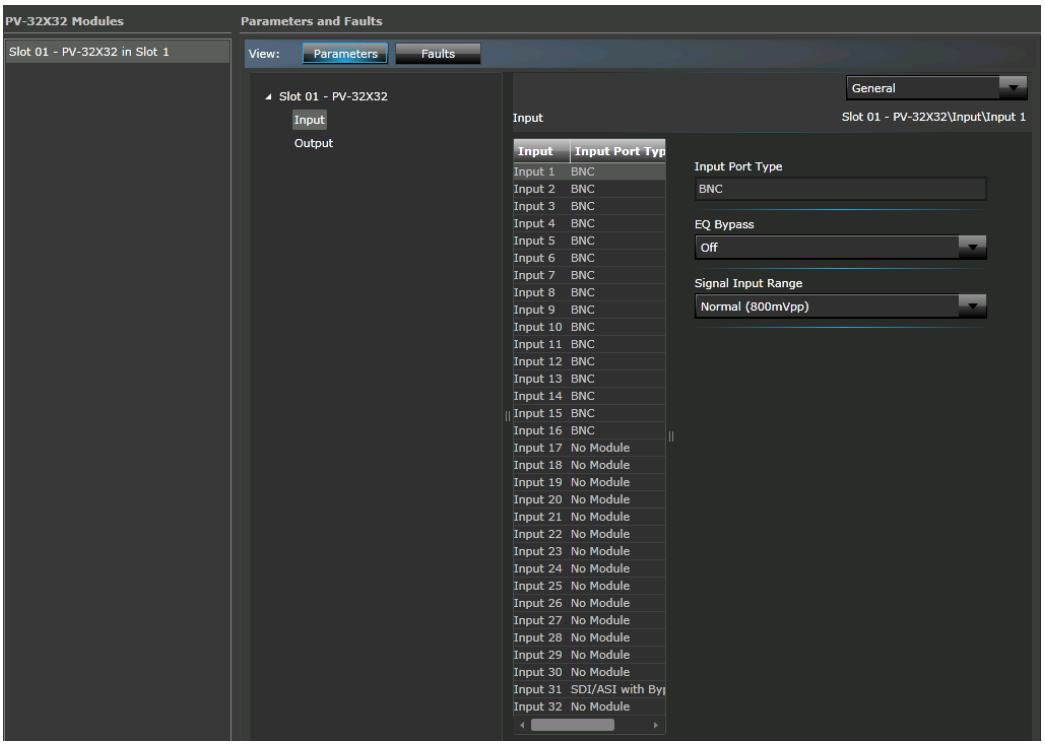

Hardware
Dashboard Platinum VX 1RU CQ16
View: List Faults
Name Slot Category Version Product ID Alarm Status
Category: I/O Cards (2 items)
PV-32X32 1 I/O Cards 1.0 11 Open Module
PV-CQ16 2 I/O Cards 1.2.129 236 Open Module

Both the 1 RU and 1 RU CQS frames offer up to 32 inputs and outputs, and parameters for these are displayed to the right, categorized under **Input** and **Output** menus.

INPUTS

Under **Input**, the **Input Port Type** column displays information for:

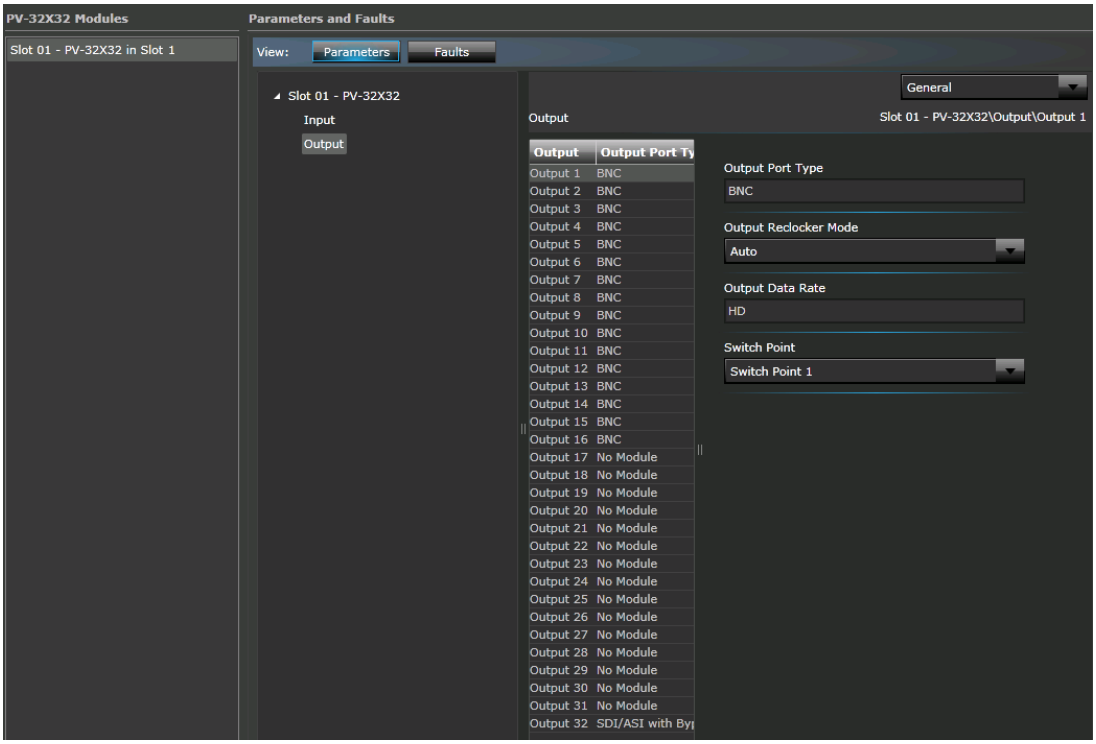
- **BNCs** in input slots 1-16
  (For BNC parameters, see BNC Module Input Parameters (on page 99))
- **SFPs** (if plugged in) in input slots 17-32
  (SFP Parameters are displayed depending on the type of SFP inserted. See Supported SFP Specifications (on page 34).)



OUTPUTS

Under **Output**, the **Output Port Type** column displays information for:

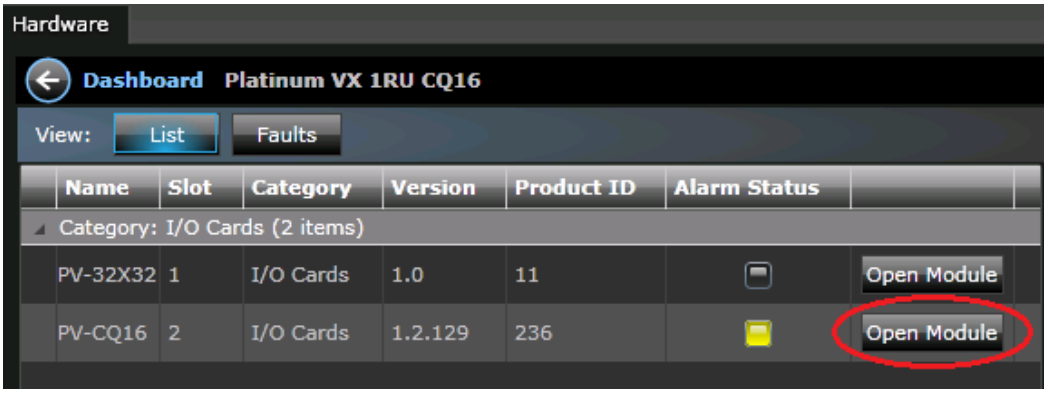
- **BNCs** in output slots 1-16
  (For BNC parameters, see BNC Module Input Parameters (on page 99))
- **SFPs** (if plugged in) in output slots 17-32
  (SFP Parameters are displayed depending on the type of SFP inserted. See Supported SFP Specifications (on page 34).)



PV-CQ16 Modules (CQS Modules)

PV-CQ16 is the CQS Module present in a 1 RU CQS frame (See 1 RU Frame (PV-CQ16-FR-1) with Clean and Quiet Switching (on page 25))

When you click the **Open Module** button against a CQS Module in the Modules Dashboard View, parameters are displayed to the right, categorized under menus. See CQS Parameters (on page 107).



Parameters

Module Parameters

BNC Module Input Parameters

The following Input parameters are displayed:

Table 31: BNC Module - Input Parameters

Name	Description	Type	Options
Input Port Type	Reports the type of port.	RO	• BNC
EQ Bypass	Sets the EQ mode	RW	• On • Off (Default)
Signal Input Range	In normal operation, input EQ is set to compensate cable loss where at the other end of the cable, the driver outputs 800mVpp. If a passive splitter is present on the input side of the module, set this to *Small (400mVpp)*.	RW	• Normal (800mVpp) • Small (400mVpp)

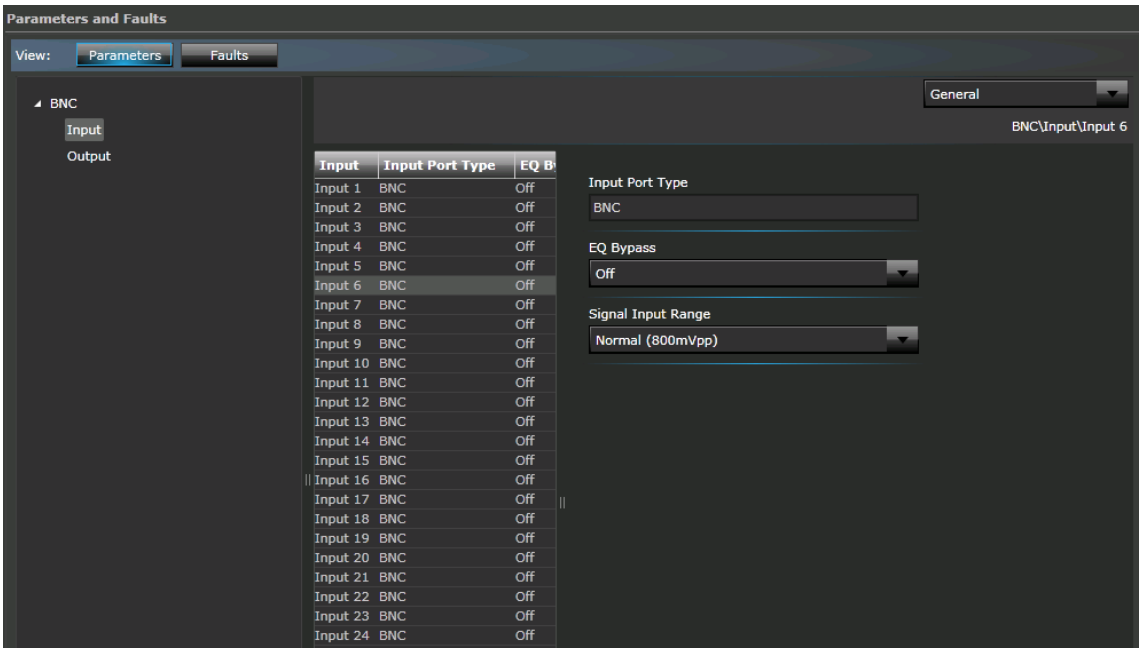


Figure 66: BNC Module Inputs

BNC Module Output Parameters

The following parameters are displayed:

Table 32: BNC Module - Output Parameters

Name	Description	Type	Options
Output Port Type	Reports the type of port.	RO	• BNC
Output Reclocker Mode	Sets the reclock mode to automatic or bypass or to one of three manual fixed rates.	RW	• Auto (Default) • 3G • HD • SD • Bypass
Output Data Rate	Detects data rate	RO	• Unknown • SD • HD • 3G
Switch Point		RW	• Switch Point 1 • Switch Point 2 • Switch Point 3 • Switch Point 4

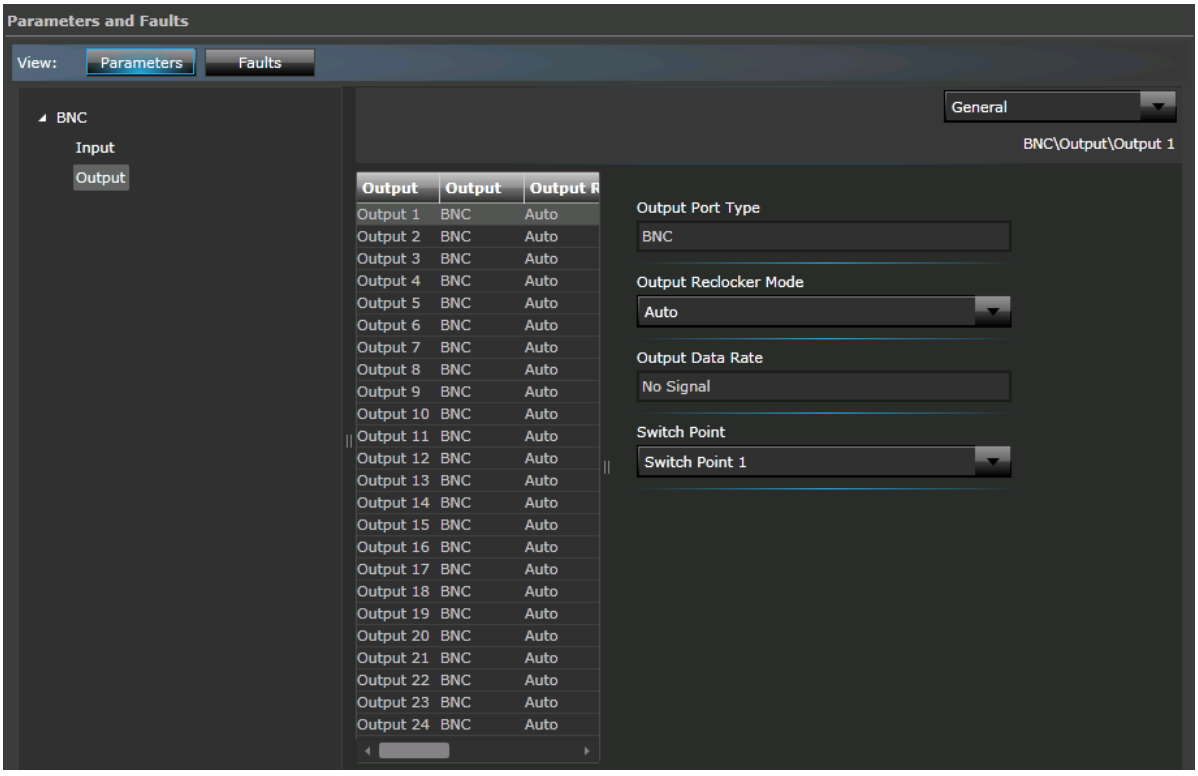


Figure 67: BNC Module Outputs

SFP Module Input Parameters

In This Section

SFP+2E+DEC Dual Electrical Receiver Parameters 101
SFP+2ERX+NR Dual Electrical Receiver Parameters..... 101
OP+SFP+2ORX+NR Dual Optical Receiver Parameters 102
SFP+HDMI+IN Electrical Receiver Parameters..... 102

Note: Specific parameters displayed correspond to the type of SFP.

SFP+2E+DEC Dual Electrical Receiver Parameters

Table 33: SFP+2E+DEC Module Input Parameters

Name	Description	Type	Options
Input SFP ID	Reports the type of SFP	RO	SFP+2E+DEC
Input Port Type	SFP Description	RO	Dual Composite RX
Input SFP Temperature	Displays the internal temperature for the SFP	RO	Range:-198 to 262 °F (-128 to 128 °C)
Signal Status	Reports input signal status. Reports the line rate if supported signal is detected	RO	• 525 • 625 • No Signal • Unknown
ADC Out-of-Range	Reports whether the input signal level is out of ADC processing range	RO	• Yes • No
Decoder Video Standard	Video standard for decoding	RO	• Auto (NTSC/PAL-B) • NTSC • PAL-B • NTSC-4.43 • NTSC-J • PAL-M • PAL-N • PAL60

SFP+2ERX+NR Dual Electrical Receiver Parameters

Table 34: SFP+2ERX+NR Module Input Parameters

Name	Description	Type	Options
Input SFP ID	Reports the type of SFP	RO	SFP+2ERX+NR
Input Port Type	SFP Description	RO	Dual SDI/ASI RX
Input SFP Temperature	Displays the internal temperature for the SFP	RO	Range:-198 to 262 °F (-128 to 128 °C)

OP+SFP+2ORX+NR Dual Optical Receiver Parameters

Table 35: OP+SFP+2ORX+NR Module Input Parameters

Name	Description	Type	Options
Input SFP ID	Reports the type of SFP	RO	OP+SFP+2ORX+NR
Input Port Type	SFP Description	RO	Dual Optical RX
Input SFP Temperature	Displays the internal temperature for the SFP	RO	Range:-198 to 262 °F (-128 to 128 °C)
Signal Power	Reports the received power	RO	• No Signal • -26 to +10 dBm • Too Low

SFP+HDMI+IN Electrical Receiver Parameters

Table 36: SFP+HDMI+IN Input Parameters

Name	Description	Type	Options
Input SFP ID	Reports the type of SFP	RO	SFP+HDMI+IN
Input Port Type	SFP Description	RO	HDMI RX
Input SFP Temperature	Displays the internal temperature for the SFP	RO	Range:-198 to 262 °F (-128 to 128 °C)
Valid TDMS DE	Reports the presence status of input data	RO	• Yes • No
Valid TDMS Clock	Reports the presence status of input clock	RO	• Yes • No
HDMI Input Module	Reports the detected input signal mode	RO	• DVI • HDMI
HDMI Input Video Standard	Reports the detected input signal standard	RO	• <Detected Standard>
Audio Channel Count	Reports the detected audio channel numbers.	RO	• Unknown • 2-8
Input Audio Mute	Mutes the output audio	RW	• Yes • No

SFP Module Output Parameters

In This Section

SFP+2ETX+NR Dual Electrical Transmitter Parameters.....103
SFP+2E+ENC Dual Electrical Transmitter Parameters.....103
OP+SFP+2OTX+13+NR Dual Optical Transmitter Parameters 104
SFP+HDMI+OUT Electrical Transmitter Parameters 105

Note: Specific parameters displayed correspond to the type of SFP.

SFP+2ETX+NR Dual Electrical Transmitter Parameters

Table 37: SFP+2ETX+NR Output Parameters

Name	Description	Type	Options
Output SFP ID	Reports the type of SFP	RO	SFP+2ERX+NR
Output Port Type	SFP Description	RO	SFP+2ERX+NR
Output SFP Temperature	Displays the internal temperature for the SFP	RO	Range:-198 to 262 °F (-128 to 128 °C)
Output Reclocker Mode	Sets the reclock mode to automatic or bypass or to one of three manual fixed rates.	RW	• Auto • SD • HD • 3G • Bypass
Output Data Rate	Reports the signal rate detected	RO	• Unknown • SD • HD • 3G • No Signal
Switch Point		RW	• Switch Point 1 • Switch Point 2 • Switch Point 3 • Switch Point 4

SFP+2E+ENC Dual Electrical Transmitter Parameters

Table 38: SFP+2E+ENC Output Parameters

Name	Description	Type	Options
Output SFP ID	Reports the type of SFP	RO	SFP+2ER+ENC
Output Port Type	SFP Description	RO	Dual Composite TX

Name	Description	Type	Options
Output SFP Temperature	Displays the internal temperature for the SFP	RO	Range:-198 to 262 °F (-128 to 128 °C)
Output Data Rate	Reports the signal rate detected	RO	• Unknown • SD • HD • 3G • No Signal
Switch Point		RW	• Switch Point 1 • Switch Point 2 • Switch Point 3 • Switch Point 4
Encoder Video Standard		RW	• NTSC • PAL-B • PAL-M • PAL-N
Pedestal Control		RW	• On • Off
VBI Blanking		RW	• On • Off

OP+SFP+2OTX+13+NR Dual Optical Transmitter Parameters

Table 39: OP+SFP+2OTX+13+NR Output Parameters

Name	Description	Type	Options
Output SFP ID	Reports the type of SFP	RO	SFP+2ERX+NR
Output Port Type	SFP Description	RO	SFP+2ERX+NR
Output SFP Temperature	Displays the internal temperature for the SFP	RO	Range:-198 to 262 °F (-128 to 128 °C)
Output Reclocker Mode	Sets the reclock mode to automatic or bypass or to one of three manual fixed rates	RW	• Auto • SD • HD • 3G • Bypass
Output Data Rate	Reports the signal rate detected	RO	• Unknown • SD • HD • 3G • No Signal

Name	Description	Type	Options
Switch Point		RW	• Switch Point 1 • Switch Point 2 • Switch Point 3 • Switch Point 4
Mute		RW	• Off • On
Wavelength	Reports the transmitter wavelength	RO	0 to 10000 nm

SFP+HDMI+OUT Electrical Transmitter Parameters

Table 40: SFP+HDMI+Out Output Parameters

Name	Description	Type	Options
Output SFP ID	Reports the type of SFP	RO	SFP+HDMI+OUT
Output Port Type	SFP Description	RO	HDMI TX
Output SFP Temperature	Displays the internal temperature for the SFP	RO	Range:-198 to 262 °F (-128 to 128 °C)
Output Reclocker Mode	Sets the reclock mode to automatic or bypass or to one of three manual fixed rates	RW	• Auto • SD • HD • 3G • Bypass
Output Data Rate	Reports the signal rate detected	RO	• Unknown • SD • HD • 3G • No Signal
Switch Point		RW	• Switch Point 1 • Switch Point 2 • Switch Point 3 • Switch Point 4
EDH Presence	Reports the presence of EDH packages for SD-SDI	RO	• Yes • No
Emb Audio Group Presence	Reports the presence of an embedded audio group	RO	• <String>
HDMI Output Module	Sets the output mode (This control must be set to the correct value to enable the SFP module.)	RW	• HDMI • DVI
HDMI Output Format	Sets the output video format	RW	• RGB 444 • YCbCr 422 • YCbCr 444

Name	Description	Type	Options
Clock Termination	Detects the presence of a termination (sink) device	RO	• Yes • No
DDC Control Status	Reports whether there is an error in the DDC communication	RO	• No Error • Bad Receiver BKSV • Ri Mismatch • Pj Mismatch • I2C Error (usually a no-ack) • Timed Out Waiting for Downstream Repeater DONE • Max Cascade of Repeaters Exceeded • SHA-1 Hash Check of KSV List Failed • Too Many Devices Connected to Repeater Tree

CQS Parameters

The CQS Parameters are displayed in the following groups in the UI:

CQS 1 (See CQS (1/2) Parameters (on page 108))

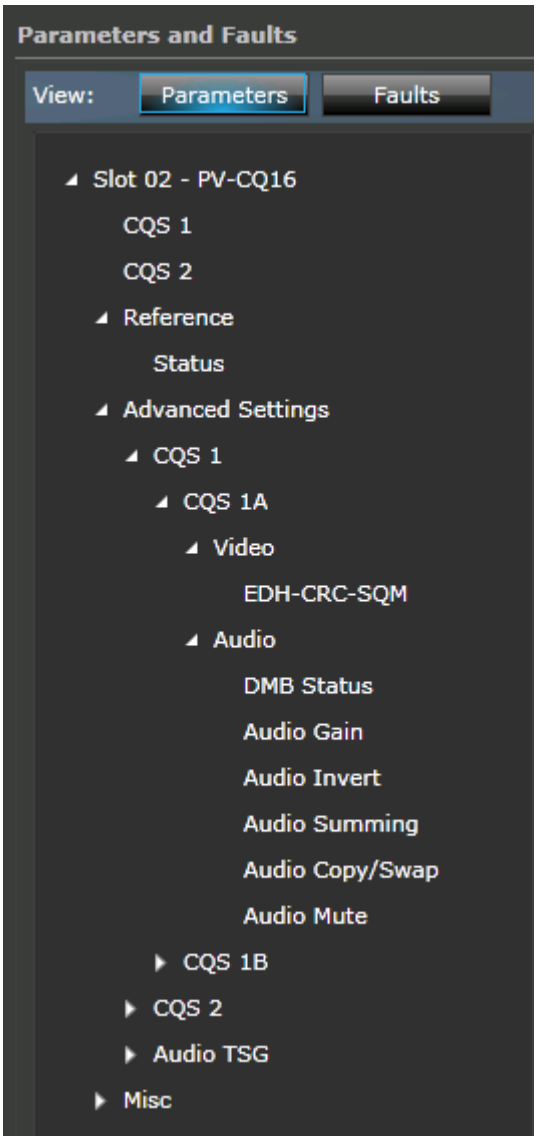
CQS 2 (See CQS (1/2) Parameters (on page 108))

Reference (See Reference Parameters (on page 108))

- Status

Advanced Setting (See Advanced Setting (on page 109))

- **CQS 1** (See CQS 1/2 (Advanced) (on page 110)
  - **CQS 1 A/B** (See CQS 1/2 A/B (Advanced) (on page 111))
    - Video (See Video (on page 111))
      - EDH-CRC-SQM
    - Audio (See Audio (on page 112))
      - DMB Status
      - Audio Gain
      - Audio Invert
      - Audio Summing
      - Audio Copy/Swap
      - Audio Mute
- **CQS 2** (See CQS 1/2 (Advanced) (on page 110)
  - **CQS 2 A/B** (See CQS 1/2 A/B (Advanced) (on page 111))
    - Audio (See Audio (on page 112))
      - Audio Gain
      - Audio Invert
      - Audio Summing
      - Audio Copy/Swap
      - Audio Mute
- Audio TSG (See Audio TSG (on page 113))
  - Audio Tones Ch 1 A
  - Audio Tones Ch 1 B
  - Audio Tones Ch 2 A
  - Audio Tones Ch 2 B



Misc (See Misc Parameters (on page 114))

CQS (1/2) Parameters

Table 41: CQS 1/2 Parameters

Name	Description	Type	Options
Source for Program 1/2	The input source channel connected to CQS 1/2 Program Channel	RO	• CQS 1A • CQS 1B • CQS 2A • CQS 2B
CQS 1/2 Transition Mode Setup		RW	• Swap • Copy
Transition Rate	Sets the transition rate in milliseconds for the designated CQ switch. 0 is the default.	RW	• 0 ms to 4000 ms
Transition Type	Select the transition effect for the designated CQ switch	RW	• Cut (default) • V-Fade • Cut-Fade • Fade-Cut • X-Fade
Take Policy	Select how the switch responds when a transition that is in progress is interrupted by yet another trigger (Take). The default is Ignore (a transition in progress is not interrupted by other events)	RW	• Ignore • Terminate • Undo

Reference Parameters

Table 42: Reference Parameters

Name	**Description**	**Type**	**Options**
Reference Select	Set the source for video reference	RW	• External Ref • Free-Run
Video Sync Mode	Set the operation mode of the video synchronization	RW	• Frame Sync • Line Sync

Table 43: Reference > Status Parameters

Name	**Description**	**Type**	**Options**
Reference Standard	Displays the reference video standard.	RO	• Not Present • 525 • 625 • 720p/50

Name	Description	Type	Options
			• 720p/59.94 • 1080i/50 • 1080i/59.94
Reference Locked	Indicates whether an external reference is present and the genlock circuitry has successfully locked to it.	RO	• Yes • No
Proc Channel (1-4) Locked	Confirms whether the processing signal from the frame sync or line sync is in a "locked" state	RO	• Free-Run (default) • Yes • No

Advanced Setting

Note: This menu contains processing parameters for each input channel. There are two inputs (A and B) for each CQ switch. When a TAKE action is executed by the switch, A or B becomes the output and the next TAKE action changes another input to output.

The concept of Program and Preview is applied on the output of the switch. Any setting changes are applied to input signals before a switch and may or may not affect the current outputs (program or preview). If an input is the current output, changes to it will be applied to the output signal.

After a system reboot, only the Program output has a guaranteed connection to the source routed prior to rebooting. The Preview may connect with the same source as the Program output.

Table 44: Advanced Setting

Name	Description	Type	Options
Audio Control Style	Use to switch between Mono and Stereo modes	RW	• Mono • Stereo
Audio V-Fade	Enables an audio V-fade (clean audio hotswitch).	RW	• Enable • Disable
Fade Time	Set the global audio fade rate	RW	0 seconds to 1 second

CQS 1/2 (Advanced)

Table 45: CQS 1/2 (Advanced)

Name	Description	Type	Options
Frame Sync Output Standard	Set Frame Sync's output format	RW	• Follow Input Standard • 525 • 625 • 720p/50 • 720p/59.94 • 1080i/50 • 1080i/59.94 • 1080p/50 • 1080p/59.94
V-Phase	Adjusts the vertical phase of the frame sync	RW	• 0 lines to 524 lines (SD-525) • 0 lines to 624 lines (SD-625) • 0 lines to 749 lines (720p/59.94, 720p/60, 720p/50) • 0 lines to 1124 lines (all 1080i and 1080p variations)
H-Phase	Adjusts the horizontal phase of the frame sync	RW	• 0.000 us to 63.481 us (SD-525) • 0.000 us to 63.926 us (SD-625) • 0.000 us to 22.231 us (720p/59.94) • 0.000 us to 26.653 us (720p/50) • 0.000 us to 29.646 us (1080i/59.94) • 0.000 us to 35.542 us (1080i/50) • 0.000 us to 14.823 us (1080p/59.94) • 0.000 us to 17.771 us (1080p/50)
LOV Mode	Set the output behavior of the module during loss of input video	RW	• Pass • Freeze (Default) • Black

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CQS 1/2 A/B (Advanced)

Table 46: CQS 1/2 A/B (Advanced)

Name	Description	Type	Options
TSG Enable	Enable Test Pattern Generation	RW	• On • Off
TSG Select	Select test patterns for each SDI Input (when TSG Enable is active).	RW	• Black • Color Bars 75% • Horizontal Sweep Y-only • Horizontal Sweep • White • CrossHatch

Video

Table 47: Video Parameters

Name	Description	Type	Options
CQS (1/2 A/B) Video Status	Video standard of processing channel	RO	• Not Present • 525 • 625 • 720p/50 • 720p/59.94 • 1080p/50 • 1080p/59.94 • 1080i/50 • 1080i/59.94
CQS (1/2 A/B) Black Detected	Black frames detected on channel	RO	• Yes • No
CQS (1/2 A/B) Freeze Detected	Frozen frames detected on channel	RO	• Yes • No

Table 48: EDH-CRC-SQM Parameters

Name	Description	Type	Options
CQS (1/2 A/B) Input Y CRC Status	Displays Y CRC errors for HD-SDI input	RO	0 to 4294967295 and precision of 0 decimal places
CQS (1/2 A/B) Input C CRC Status	Displays C CRC errors for HD-SDI input	RO	0 to 4294967295 and precision of 0 decimal places
CQS (1/2 A/B) Input EDH/CRC Enable	Enables EDH/CRC error logging for Channel Input	RW	• Enable • Disable
CQS (1/2 A/B) Input EDH/CRC Clear	Clears the EDH/CRC error counter for Channel Input	RW	• Yes • No

Audio

Table 49: Audio Parameters

Category	Name	Description	Type	Options
DMB Status	CQS (1/2 A/B) Audio V-bit Status		RO	
	CQS (1/2 A/B) Audio Format Fdbk		RO	
	CQS (1/2 A/B) Peak/Mute Status		RO	
	CQS (1/2 A/B) Group (1-4) Present	Reports the presence of audio group (1-4) in the SDI signal.	RO	• Yes • No
	CQS (1/2 A/B) Group (1-4) Checksum Error	Reports if a checksum error has occurred in the group (1-4)	RO	• Yes • No
	CQS (1/2 A/B) Group (1-4) DBN Error	Reports if a data block number error has occurred in the group (1-4)	RO	• Yes • No
	CQS (1/2 A/B) Group (1-4) Parity Error	Reports if a parity error has occurred in the group (1-4)	RO	• Yes • No
	CQS (1/2 A/B) Group (1-4) ECC Error	Reports if an error correction code error has occurred in the group (1-4)	RO	• Yes • No
	CQS (1/2 A/B) Group (1-4) Active Channels	Reports the active channels from the control packet of audio group (1-4)	RO	• None • CH1 • CH2 • CH12 • CH3 • CH13 • CH23 • CH123 • CH4 • CH14 • CH24 • CH124 • CH34 • CH134 • CH234 • CH1234
	CQS (1/2 A/B) Group (1-4) Sampling Rate	Reports the sampling rate from the control packet of audio group (1-4)	RO	• 48.0 kHz • 44.1 kHz • 32.0 kHz • FreeRun
Audio Gain	CQS (1/2 A/B) Gain Lock	When enabled, this parameter couples together the gain controls.	RW	• Yes • No

Category	Name	Description	Type	Options
	CQS (1/2 A/B) Ch Gain (Channels 1A/1B/2A/2B/3A/3B/4A/4B/5A/5B/6A/6B/7A/7B/8A/8B)	Use this control to adjust the gain of the designated embedded audio output channel pairs 1A/1B to 8A/8B.		• -36.0 dB to 36.0 dB (0.0 dB default)
Audio Invert	CQS (1/2 A/B) Ch Invert (Channels 1A/1B/2A/2B/3A/3B/4A/4B/5A/5B/6A/6B/7A/7B/8A/8B)	This control inverts the selected audio channel pairs to correct for phase error.		• Yes • No
Audio Summing	CQS (1/2 A/B) Ch Summing (Channels 1A/1B, 2A/2B, 3A/3B, 4A/4B, 5A/5B, 6A/6B, 7A/7B, 8A/8B)	These controls enable or disable the summing of the designated output embedded audio pair.		• None • Right to Left • Left to Right • Both
Audio Copy/Swap	CQS (1/2 A/B) Ch Copy/Swap (Channels 1A/1B, 2A/2B, 3A/3B, 4A/4B, 5A/5B, 6A/6B, 7A/7B, 8A/8B)	Use this control to copy or swap the designated output embedded audio pair.		• No Swap • Swap • Left to Right • Right to Left
Audio Mute	CQS (1/2 A/B) Ch Mute (Channels 1A/1B/2A/2B/3A/3B/4A/4B/5A/5B/6A/6B/7A/7B/8A/8B)	Individual embedded channels can be muted using this control.		• Yes • No

Audio TSG

Table 50: Audio TSG Parameters

Name	Description	Type	Options
Test Tone 400 Hz (dBFS)	Audio test signal generator level control to adjust the volume of the audio test tones	RW	6.0 dBFS to 0.0 dBFS (-18.0 dBFS default)
Test Tone 1 kHz (dBFS)	Audio test signal generator level control to adjust the volume of the audio test tones	RW	6.0 dBFS to 0.0 dBFS (-18.0 dBFS default)
Test Tone 2 kHz (dBFS)	Audio test signal generator level control to adjust the volume of the audio test tones	RW	6.0 dBFS to 0.0 dBFS (-18.0 dBFS default)
Test Tone 4 kHz (dBFS)	Audio test signal generator level control to adjust the volume of the audio test tones	RW	6.0 dBFS to 0.0 dBFS (-18.0 dBFS default)

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Audio Test Tones Ch 1A/1B/2A/2B

Table 51: Audio TSG Parameters

Name	Description	Type	Options
CQS (1A/1B/2A/2B) Ch (1A-8B) Output Sources	Selects the source for output embedded audio channel (1A-8B)	RW	• DMB Ch • Test Tone 400 Hz • Test Tone 1 kHz • Test Tone 2 kHz • Test Tone 4 kHz • Mute • EBU R68 • SMPTE RP155

Misc Parameters

Table 52: Misc Parameters

Category	Name	Description	Type	Options
Configuration	Transition Rate (Fast) (ms)	Set the duration of the transition (A duration of 0 ms results automatically in an instant Cut)	RW	0 to 4000 ms
	Transition Rate (Medium) (ms)		RW	0 to 4000 ms
	Transition Rate (Slow) (ms)		RW	0 to 4000 ms
Board Temperature	Temperature Zone 1 (degrees C)	Temperature of Zone 1 *(When higher than 86 C, the submodule shuts down. At 84 C, a warning alarm will is triggered)*	RO	0 to 86 degrees C
	Temperature Sub Zone 2 (degrees C)	Temperature of Zone 2 *(When higher than 86 C, the submodule shuts down. At 84 C, a warning alarm will is triggered)*	RO	0 to 86 degrees C
	Temperature Sub Zone 3 (degrees C)	Temperature of Zone 3 *(When higher than 86 C, the submodule shuts down. At 84 C, a warning alarm will is triggered)*	RO	0 to 86 degrees C
	Temperature Sub Board FPGA (degrees C)	Temperature of FPGA *(When higher than 86 C, the submodule shuts down. At 84 C, a warning alarm will is triggered)*	RO	0 to 86 degrees C
	Available System Memory (kB)	Displays available system memory in the CQS module	RO	

Category	Name	Description	Type	Options
Version	Configuration	Displays the current configuration on CQS module	RO	CQS
	Hardware Main Version	Hardware Version	RO	<Version>
	CQS Hardware Version	Hardware Version of CQS module	RO	<Version>
	CQS FPGA Version	Date of main FPGA Revision	RO	<Date>
	CQS Firmware Revision	Version of CQS firmware	RO	<Version>
	CQS 2nd CPU Firmware Version	Version of firmware on the CQS module (CPU2)	RO	<Version>
	CQS Firmware Alternate Revision	Version of alternate firmware on the CQS module	RO	<Version>
Other	Serial Number	Displays the unit's serial number	RO	<String>
	Factory Default	Restore settings to manufactory default	RW	• Yes • No

Frame Specific Parameters

Frame specific components and their parameters can be viewed by clicking the **Open Frame** link.

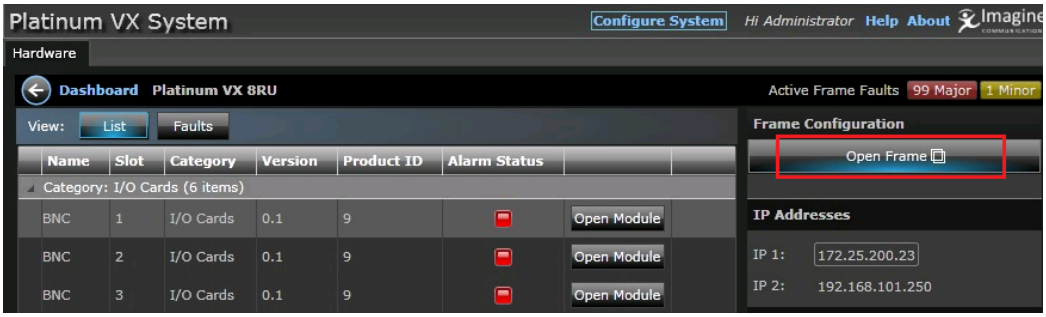
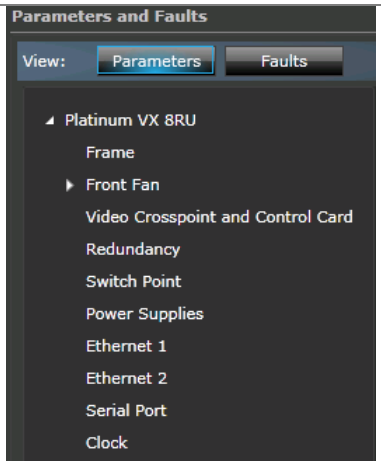


Figure 68: Open Frame option to access Frame parameters

The following parameters provide a control interface to the Platinum VX frame. These parameters are divided into different menu groups:

Frame Parameters (on page 116)	
Front Fan Parameters (on page 117)	
Video Crosspoint and Control Parameters (on page 117)	
Redundancy Parameters (on page 118)	
Switch Point Parameters (on page 119)	

Power Supplies Parameters (on page 120)
Ethernet 1 Parameters (on page 121)
Ethernet 2 Parameters (on page 122)
Serial Port Parameters (on page 123)
Clock Parameters (on page 124)



Frame Parameters

The **Frame** section provides the following parameters:

Table 53: Frame Parameters

Parameter	Type	Description/Options
Frame Type	RO	• PV-FR-1 • PV-FR-2 • PV-FR-4 • PV-FR-8 • PV-CQ16-FR-1 • PV-72SFP-FR-2
Frame ID	RW	A unique frame identifier (0-511)

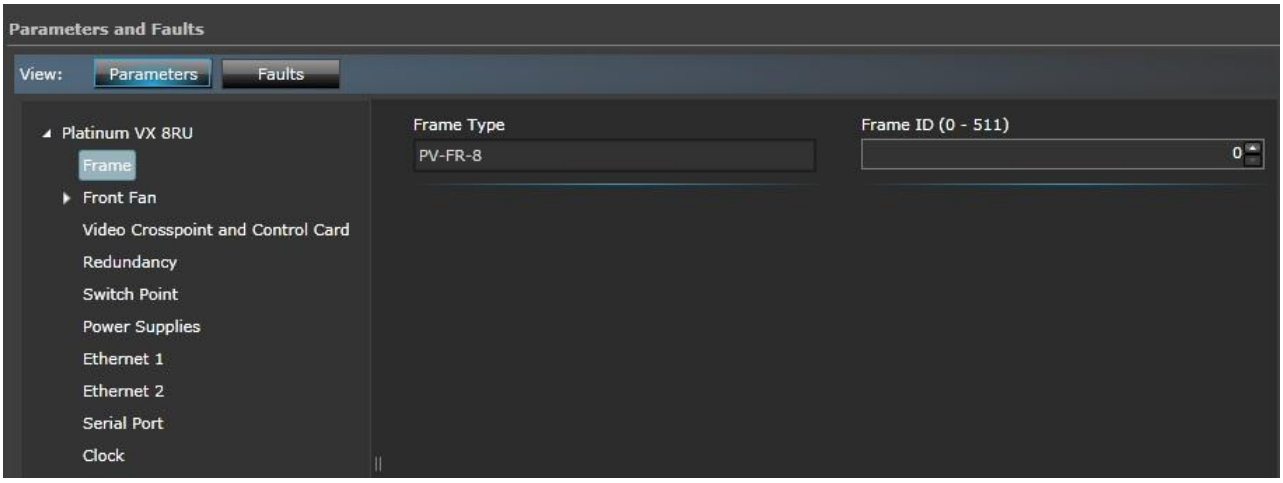


Figure 69: Frame Parameters

Front Fan Parameters

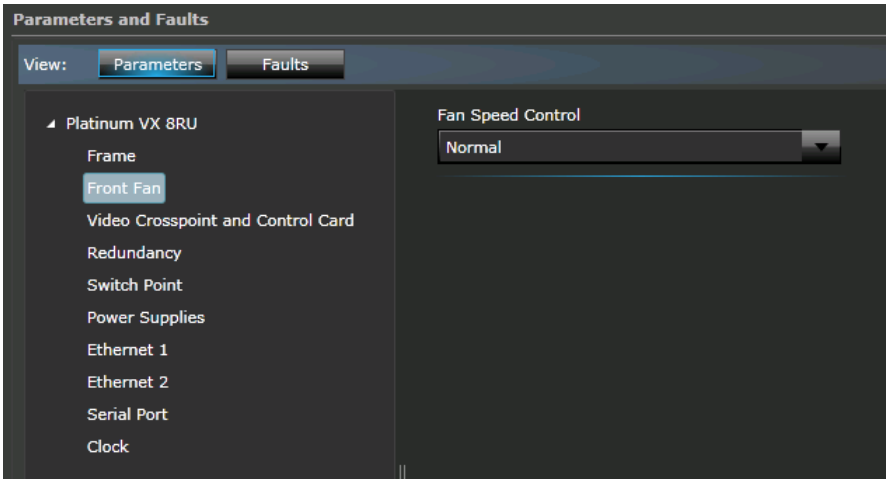
The **Front Fan** section provides status on fan modules and individual fans in case of Platinum VX 4 and 8 RU frames, and just the fans in case of Platinum VX 1 and 2 RU frames (since the fans are built-in).

The following parameters are displayed on clicking the Front Fan option.

Table 54: Front Fan Parameters

Parameter	Type	Description/Options
Fan Speed Control	RW	The speed of the fans in the frame. • Normal • Maximum

Also see Fan Speed for 1 RU Frames (on page 47).



Video Crosspoint and Control Parameters

The **Video Crosspoint and Control Card** section provides the following parameters:

Table 55: Video Crosspoint and Control Card Parameters

Parameter	Type	Description/Options
PVX-RES 1 Serial #	RO	• <String> • Not Present
PVX-RES 2 Serial # *(4 RU and 8 RU only)*	RO	• <String> • Not Present
PVX-RES / Video Crosspoint 1	RO	• Active • Standby • Not Present • Failed

Parameter	Type	Description/Options
PVX-RES / Video Crosspoint 2 *(4 RU and 8 RU only)*	RO	• Active • Standby • Not Present • Failed
Select Active PVX-RES / Video Crosspoint *(4 RU and 8 RU only)*	RW	• PVX-RES / Video Crosspoint 1 • PVX-RES / Video Crosspoint 2
PVX-RES Firmware Version	RO	A string showing the current firmware version of the active PVX-RES
PVX-RES Alternate Version	RO	A string showing the firmware version on the alternate bank of the active PVX-RES

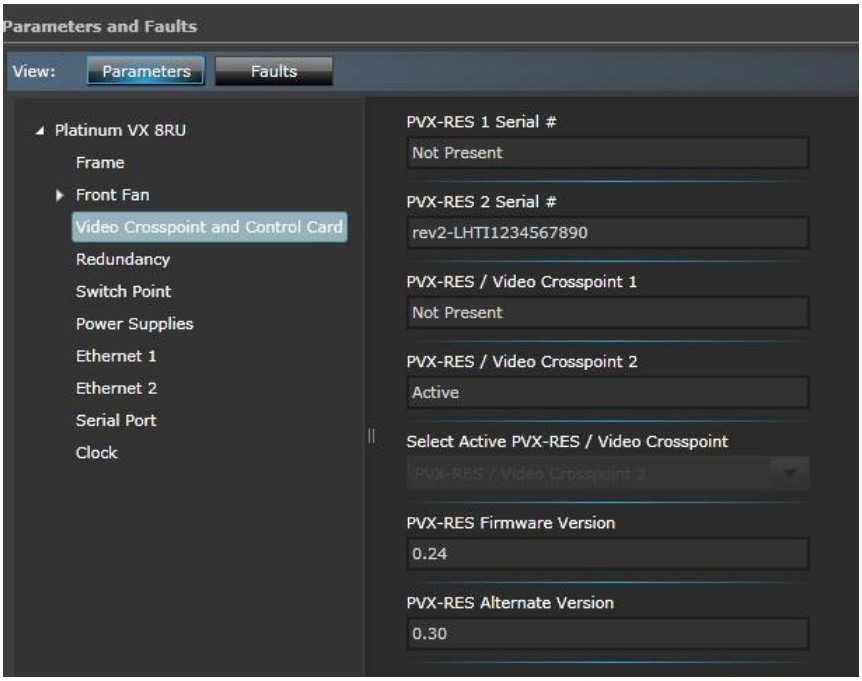


Figure 70: PVX-RES / Video Crosspoint Parameters

Redundancy Parameters

Note: This section is applicable for 4 RU and 8 RU frames.

The **Redundancy** section provides the following parameters:

Table 56: Redundancy Parameters

Parameter	Type	Description/Options
Redundancy State	RO	• Synchronizing Image • Synchronizing Data

Parameter	Type	Description/Options
Redundancy Status	RO	• Not Applicable • Failed • Successful • In Progress

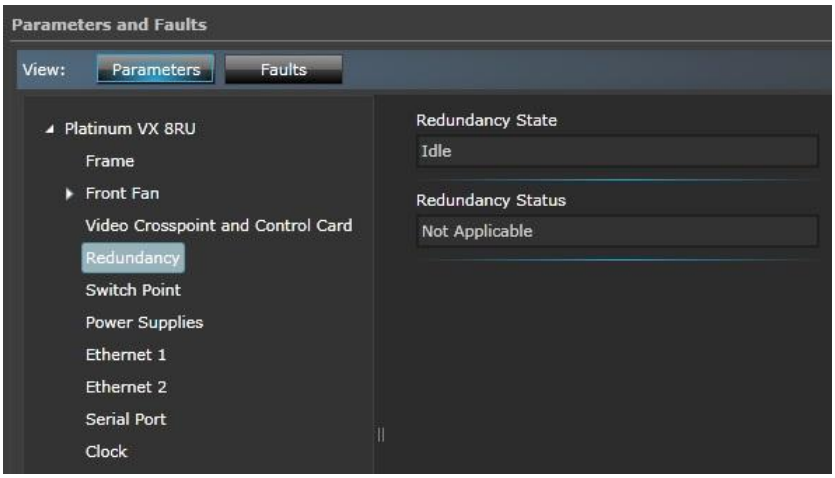


Figure 71: Redundancy Parameters

Switch Point Parameters

The **Switch Point** section provides the following parameters (for Switch Point 1-4):

Table 57: Switch Point Parameters

Parameter	Type	Description/Options
Switch Point Configuration	RW	• Standard • Advanced • Auto
Switch Point Standard	RW	• Analog 525/59.94 • Analog 625/50 • 1280x720/50P • 1280x720/59.94P • 1920x1080/59.94I • 1920x1080/50I • 1920x1080/59.94P • 1920x1080/5OP
Switch Point Delay	RO	• 0 to 65535

Parameter	Type	Description/Options
Detected Reference	RO	Displays the current detected reference standard. • None • Analog 525/59.94 • Analog 625/50 • 1280x720/50P • 1280x720/59.94P • 1920x1080/59.94I • 1920x1080/50I • 1920x1080/59.94P • 1920x1080/5OP

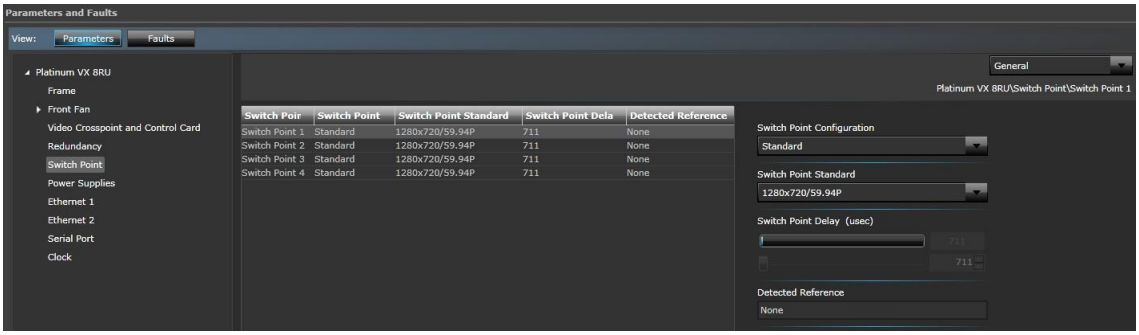


Figure 72: Switch Point Parameters

Power Supplies Parameters

The **Power Supplies** section provides the following parameters (for each of the power supplies):

Table 58: Power Supplies Parameters

Parameter	Type	Description/Options
Redundant Power Supplies	RW	• Yes • No
Power Supply Status *(Table Parameter)*	RO	• OK • Not Present • Fault • N/A
Power Supply Temperature *(Table Parameter)*	RO	• OK • Not Present • Fault • N/A Note: This parameter applies to 4 and 8 RU power supplies.

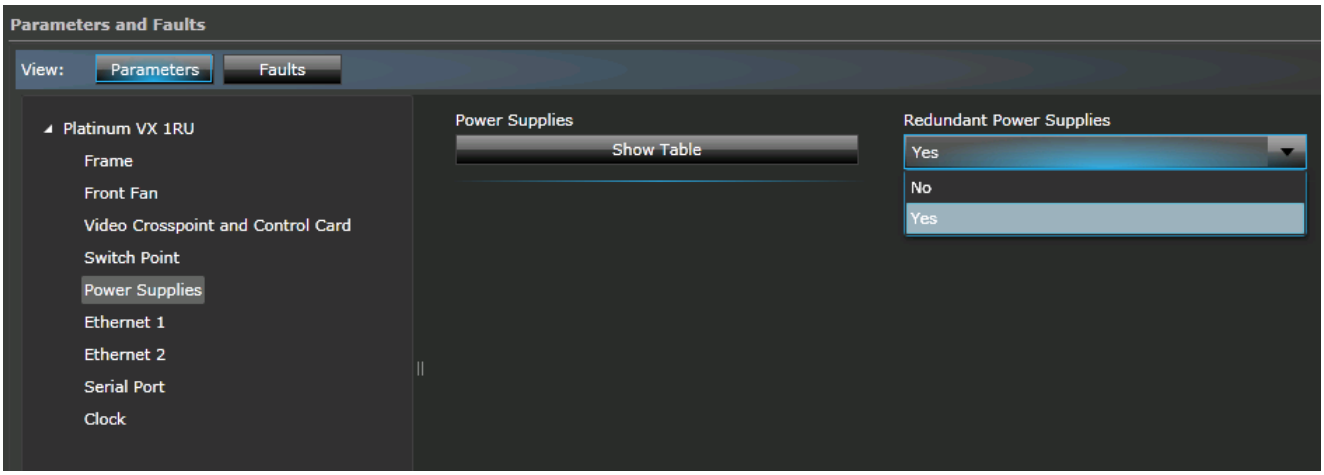


Figure 73: Power Supplies Parameters

Ethernet 1 Parameters

The **Ethernet 1** section provides the following parameters:

Table 59: Ethernet 1 Parameters

Parameter	Type	Description/Options
MAC Address 1	RO	MAC Address of the 1st Ethernet Port on the Resource Module. If using redundant Resource modules in a 4/8 RU frame: • Port 1 if the Resource module on the top slot is active • Port 3 if the Resource module on the bottom slot is active
IP Address 1	RW	IP address string for the back panel Ethernet connectors 1 and 3
IP Mask 1	RW	IP mask string for the back panel Ethernet connectors 1 and 3
Gateway Address 1	RW	Gateway Address string
Save Ethernet 1	RW	• No • Yes

Figure 74: Ethernet 1 Parameters

Ethernet 2 Parameters

The **Ethernet 2** section provides the following parameters:

Table 60: Ethernet 2 Parameters

Parameter	Type	Description/Options
MAC Address 2	RO	MAC Address of the 1st Ethernet Port on the Resource Module. If using redundant Resource modules in a 4/8 RU frame: • Port 2 if the Resource module on the top slot is active • Port 4 if the Resource module on the bottom slot is active
IP Address 2	RW	IP address string for the back panel Ethernet connectors 2 and 4
IP Mask 2	RW	IP mask string for the back panel Ethernet connectors 2 and 4
Gateway Address 2	RW	Gateway Address string
Save Ethernet 2	RW	• No • Yes

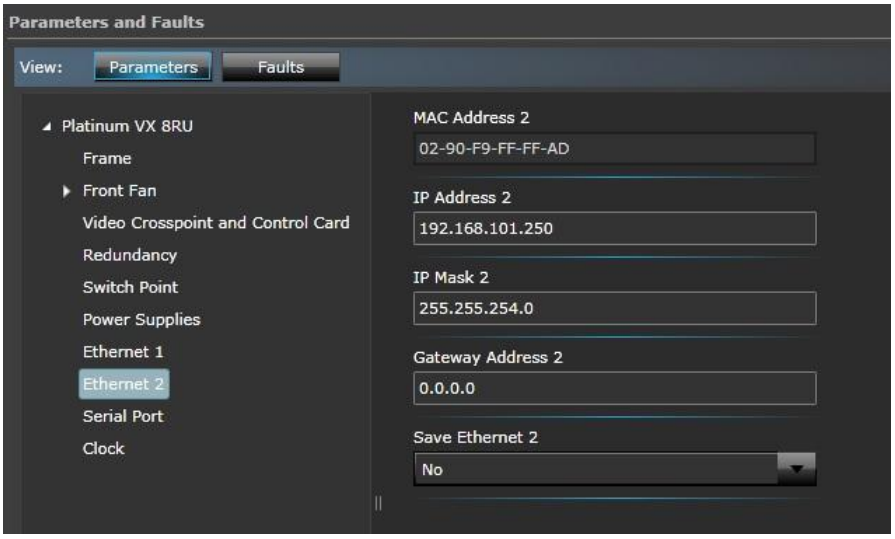


Figure 75: Ethernet 2 Parameters

Serial Port Parameters

The **Serial Port** section provides the following parameters:

Table 61: Serial Port Parameters

Parameter	Type	Description/Options
Port Mode	RW	• RS 232 • RS 422
Port Baud Rate	RW	• 300 • 600 • 1200 • 2400 • 4800 • 9600 • 14400 • 19200 • 38400 • 57600 • 115200
Port Stop Bit	RW	• 1 • 2
Port Parity	RW	• None • Odd • Even
Save Serial	RW	• No • Yes

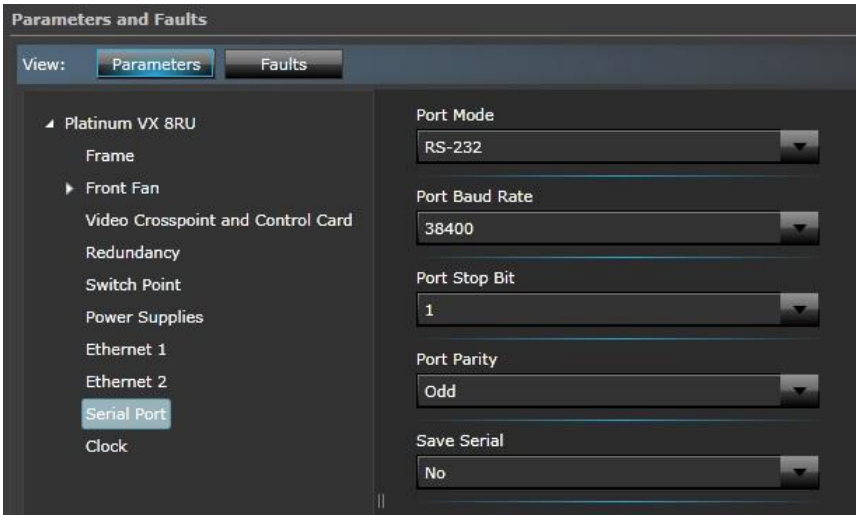


Figure 76: Serial Port Parameters

Clock Parameters

The **Clock** section provides the following parameters:

Table 62: Clock Parameters

Parameter	Type	Description/Options
UTC Date (YYYY-MM-DD)	RW	Set the UTC Date in YYYY-MM-DD format
UTC Time (hh:mm)	RO	The current UTC Time in yyyy:mm:dd format
UTC Date (YYYY-MM-DD)	RO	The current UTC Date in yyyy:mm:dd format
Set UTC Time (hh:mm:ss)	RW	Set the UTC Time in hh:mm:ss format
Set Clock Now	RW	• No • Yes

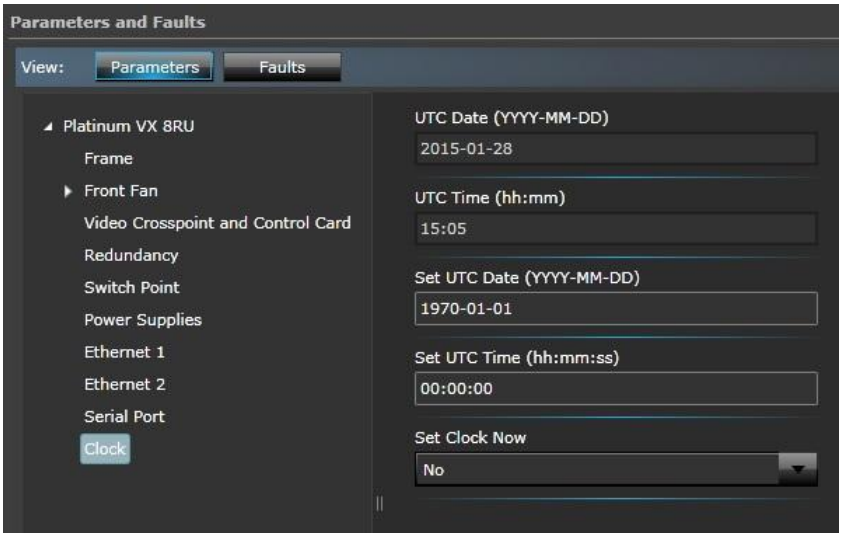


Figure 77: Clock Parameters

Module Configuration

CQS Module Configuration

There are 3 main menus via which you configure CQS:

- **CQS 1/CQS 2** (See CQS Menu (on page 126))
- **Reference** (See Reference Menu (on page 127))
- **Advanced Settings** (See Advanced Settings Menu (on page 127))

Note: The **CQS 1** and **CQS 2** menus have the same parameters for configuring video and audio processing in the switches.

CQS Menu

Set the following options in the **CQS** menu:

- **CQS Transition Mode Setup**
  Set Transition Mode to *Swap (*default*)* or *Copy* depending on which input sources are to be routed to the preview and program output after the transition.
    - If you use *Swap*, the source at the *Program* output will be switched to *Preview* output and the source at the *Preview* output will be switched to the *Program* output.
    - If you use *Copy*, the source at the *Preview* output will be switched to the *Program* output and the *Preview* output will remain the same.
- **Transition Rate**
  Select the transition duration. Set to Fast, Medium, or Slow. Time used for fast, medium and slow is configurable from 0 to 4 seconds. If 0 is used, the transition effect will be a 'Cut'.
- **Transition Type**
  Select the transition type for the program output by picking one of Cut, V Fade, Cut Fade, Fade Cut, X Fade.
  Notes:
  - Audio transitions are always synced to video transitions.
  - Non PCM audio transitions are performed as a cut.
  - PCM audio requires 1 frame to fade in or out of a video cut.
  - The duration of PCM audio transitions is 2 frames for the zero frame 'Cut' transition.
  - For *Cut-Fade*, audio fades out 1 frame before the video cut; fade in duration is as specified.
  - For *Fade-Cut* and (non-zero frame) *Cut*, audio fades in 1 frame after the video cut.
  - With *V-Fade* and *X-Fade*, the audio transition occurs at the middle of the transition.
  - With all other transition types, the audio transition occurs at the video cut.
- **Take Policy**
  Specify switch behavior if a new command received when current transition is still in progress.
  - **Ignore**: Ignores consecutive 'Takes' while current transition is in progress

- **Terminate**: Terminates current transition with a 'Cut'
- **Undo**: Undoes the current transition, reverting to the previous state

For more details, see CQS 1/2 A/B (Advanced) (on page 111).

Reference Menu

Set the following options in the **Reference** menu:

- **Reference Select**
  Specify the reference signal to use for switch operation.
  - **External Ref**: External reference provided to frame will be used for CQS
  - **Free-run**: Internal reference will be used. (mainly for testing purposes)

    If Free-run is selected, the reference standard (**Standard for Free Run** parameter) must be specified and set to 23.98Hz, 24Hz, 30/60Hz, 29/59Hz, or 25/50Hz. Note that this parameter is hidden if an External reference is selected.
- **Video Sync Mode**
  Set to Frame Sync or Line Sync.

Note: The Reference Standard parameter displays the reference signal detected by the CQS module.

For more details, see Reference Parameters (on page 108).

Advanced Settings Menu

This menu contains processing parameters for each input channel. For each CQ switch, there are two inputs, A and B.

Set options as required. For example:

- **Frame Sync Output Standard**
  Select the video standard for both *Program* and *Preview* output. If *Follow Input Standard* (default) is selected and there is an LOV at the input, the output standard remains unchanged.
- **V-Phase and H-Phase**
  Adjust the vertical and horizontal phase of the frame sync
- **Transition Rate (ms)**
  Select the duration of the transition. The default is 0 msec, which automatically sets the transition type to 'Cut'.
- **LOV Mode**
  Select the output signal when LOV is detected at the input
- **Freeze Mode**
  Select the frozen video type (Field 1, Field 2. Frame). This parameter is only visible when LOV Mode is set to Freeze.

For more details, see Advanced Setting (on page 109) parameters.

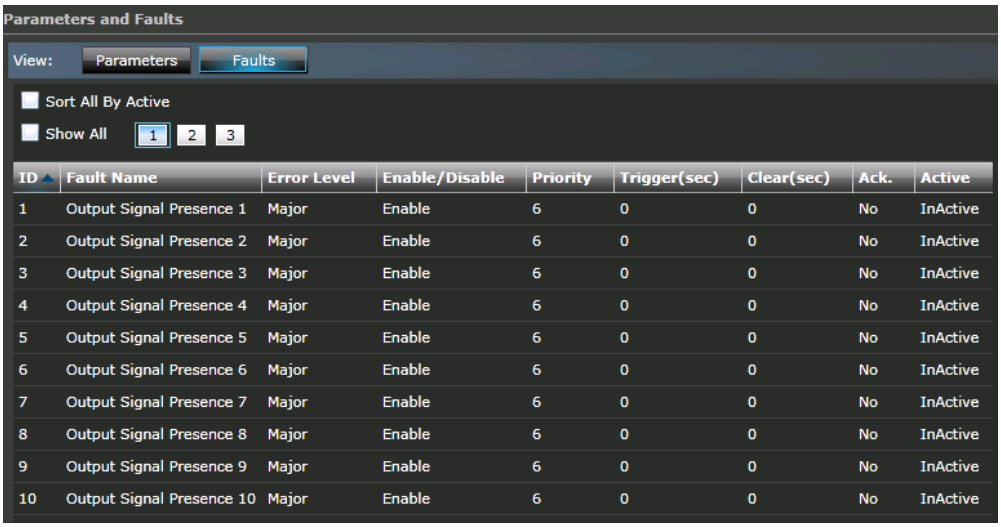
Faults

Module Faults

Module faults can be viewed by doing the following:

1. Click the **Go to Frame** button on the main navigation page
2. Click the **Open Module** button against a Module
3. Click the **Faults** button to open the module specific Faults tab

Module faults are displayed with the following details:



ID	Fault Name	Error Level	Enable/Disable	Priority	Trigger(sec)	Clear(sec)	Ack.	Active
1	Output Signal Presence 1	Major	Enable	6	0	0	No	InActive
2	Output Signal Presence 2	Major	Enable	6	0	0	No	InActive
3	Output Signal Presence 3	Major	Enable	6	0	0	No	InActive
4	Output Signal Presence 4	Major	Enable	6	0	0	No	InActive
5	Output Signal Presence 5	Major	Enable	6	0	0	No	InActive
6	Output Signal Presence 6	Major	Enable	6	0	0	No	InActive
7	Output Signal Presence 7	Major	Enable	6	0	0	No	InActive
8	Output Signal Presence 8	Major	Enable	6	0	0	No	InActive
9	Output Signal Presence 9	Major	Enable	6	0	0	No	InActive
10	Output Signal Presence 10	Major	Enable	6	0	0	No	InActive

Figure 78: Module Faults

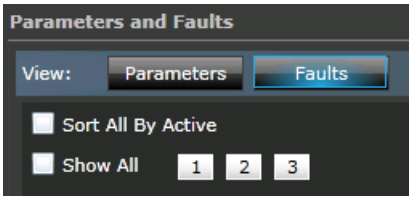
- **ID**: The Fault ID
- **Fault Name:** The Fault Name, for example, **Output Signal Presence**
- **Error Level:** Major or Minor
- **Enable/Disable**: Whether the fault has been enabled or disabled
- **Priority**: The priority level of the fault (1-10)
- **Trigger**:
- **Clear (sec):**
- **Ack**: Whether the fault has been acknowledged
- **Active**: Whether the fault is active

Also see System Fault Descriptions (on page 132).

Filtering Module Faults

Use the **Sort All by Active** or **Show All** options to filter the fault display.

Click the page numbers to navigate between pages (10 faults displayed per page).



Editing Module Fault Properties

Click on any of the faults to have editable details displayed to the right. You can choose to enable/disable the fault, change priority, trigger value, clear value, and acknowledge.

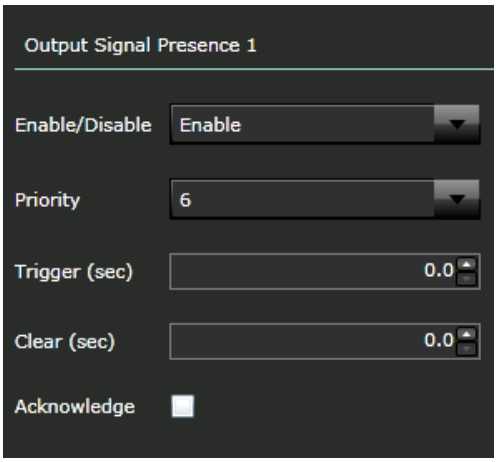


Figure 79: Editing Fault Properties

Module Fault Descriptions

The following table lists possible module faults and descriptions:

Table 63: Module Fault Descriptions

Data	Description
Output Signal Presence x	Loss of Signal in an Output Module.
Invalid Module	Active when the user inserts a TX SFP module into a RX port or vice versa.

Faults View

Faults View is a high level view of all modules in the Frame that currently have faults, as opposed to the Module specific fault view that is displayed when you choose to see faults for a specific module (See Module Faults (on page 128)).

You can opt to view alarms in the following ways:

- **No Grouping**: A flat list of all active alarms (Major, minor, informational)
- **Group by Device**: List of active alarms grouped by device (Module)

Grouping by **Device** creates groups per frame listing all faults. The header of the group indicates the frame name, and the total number of major/minor faults.

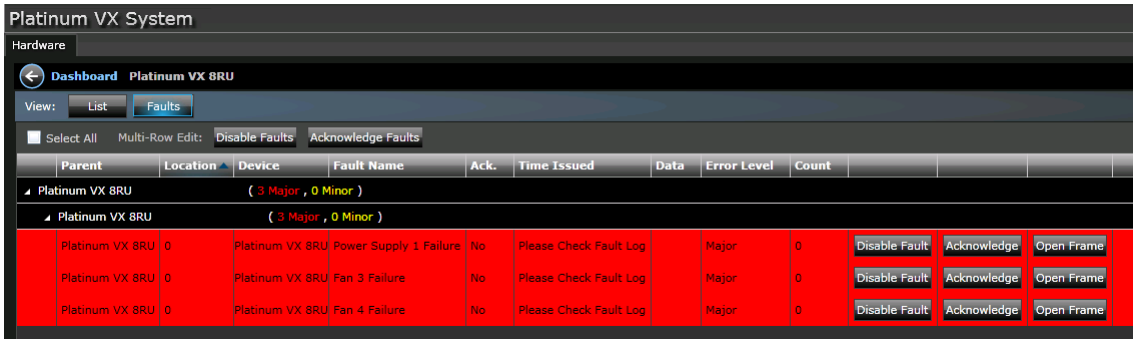

Platinum VX System
Hardware
Dashboard Platinum VX 8RU
View: List Faults
Select All Multi-Row Edit: Disable Faults Acknowledge Faults
Parent Location Device Fault Name Ack. Time Issued Data Error Level Count
Platinum VX 8RU (3 Major , 0 Minor)
Platinum VX 8RU (3 Major , 0 Minor)
Platinum VX 8RU 0 Platinum VX 8RU Power Supply 1 Failure No Please Check Fault Log Major 0 Disable Fault Acknowledge Open Frame
Platinum VX 8RU 0 Platinum VX 8RU Fan 3 Failure No Please Check Fault Log Major 0 Disable Fault Acknowledge Open Frame
Platinum VX 8RU 0 Platinum VX 8RU Fan 4 Failure No Please Check Fault Log Major 0 Disable Fault Acknowledge Open Frame

Figure 80: Faults Grouped by Device

Individual items are listed with details on:

- **Parent** - The Frame (name) that the Module is in
- **Device** - The Frame name again
- **Fault Name** - The type of Fault, and the component it is for. For example, **Fan 3 Failure**.
- **Acknowledgment** - Whether the Fault has been acknowledged
- **Time Issued** - The Time the Fault occurred. See Fault Log (on page 131).
- **Error Level** - Whether major, minor, etc.
- **Count** - The Fault count

There are also links to:

- Disable the Fault
- Acknowledge the Fault
- Open the Frame

Faults can be selected by clicking on them individually, or clicking the **Select All** button at the top to select all faults.

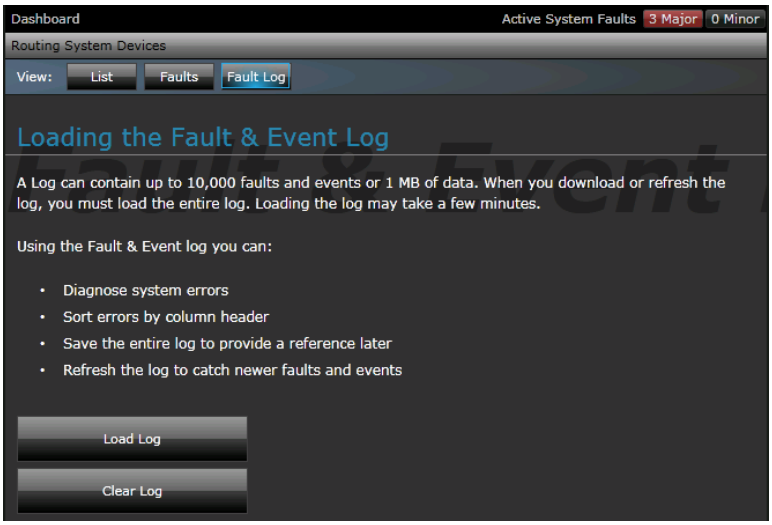
You can group Disable/Acknowledge Faults by either selecting all, or multiple selecting using the CRTL or SHIFT key and then clicking **Disable Faults** or **Acknowledge Faults** beside *Multi-Row Edit* at the top.

Note: Once you disable a fault, to re-enable it, you will need to go to that Module's Faults view and enable the fault from there.

Fault Log

The Fault Log is accessible in the main Navigation dashboard, by clicking the Fault Log button.

The log contains data on faults and events. Click **Load Log** to load the log contents.


Dashboard
Active System Faults
3 Major
0 Minor
Routing System Devices
View:
List
Faults
Fault Log
Loading the Fault & Event Log
A Log can contain up to 10,000 faults and events or 1 MB of data. When you download or refresh the log, you must load the entire log. Loading the log may take a few minutes.
Using the Fault & Event log you can:
Diagnose system errors
Sort errors by column header
Save the entire log to provide a reference later
Refresh the log to catch newer faults and events
Load Log
Clear Log

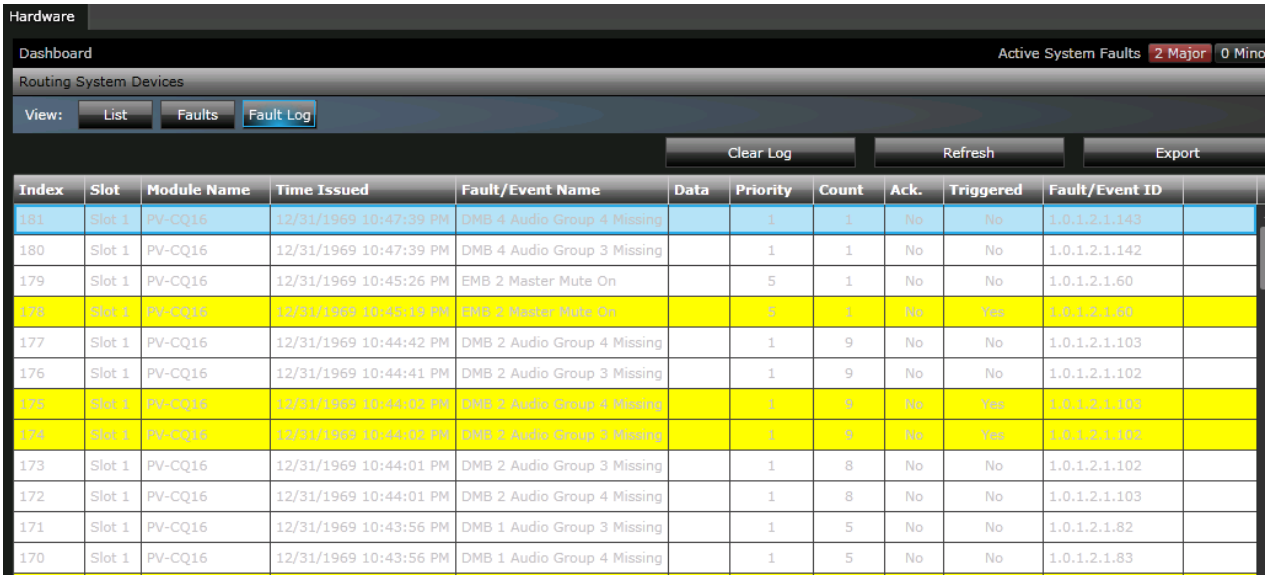
Fault Log Contents

The Fault Log contains detailed information in a spreadsheet format. Data is classified by Time Issued, Fault/Event Name, Data, Priority, Count, Acknowledgment, Triggered (status), Fault/Event ID.

The **Fault/Event** name column provides details on whether it is a **Fault** or an **Event**. If an **Event**, details are provided in the adjacent **Data** column, for example **Frame Booted Up**.

You can sort any of the columns by clicking the header, for example, if you click the **Fault/Event Name** header, similar faults are grouped together. Or you can sort by **Time Issued**.

You can **Refresh**, **Clear**, or **Export** the log contents.



Index	Slot	Module Name	Time Issued	Fault/Event Name	Data	Priority	Count	Ack.	Triggered	Fault/Event ID
181	Slot 1	PV-CQ16	12/31/1969 10:47:39 PM	DMB 4 Audio Group 4 Missing		1	1	No	No	1.0.1.2.1.143
180	Slot 1	PV-CQ16	12/31/1969 10:47:39 PM	DMB 4 Audio Group 3 Missing		1	1	No	No	1.0.1.2.1.142
179	Slot 1	PV-CQ16	12/31/1969 10:45:26 PM	EMB 2 Master Mute On		5	1	No	No	1.0.1.2.1.60
178	Slot 1	PV-CQ16	12/31/1969 10:45:19 PM	EMB 2 Master Mute On		5	1	No	Yes	1.0.1.2.1.60
177	Slot 1	PV-CQ16	12/31/1969 10:44:42 PM	DMB 2 Audio Group 4 Missing		1	9	No	No	1.0.1.2.1.103
176	Slot 1	PV-CQ16	12/31/1969 10:44:41 PM	DMB 2 Audio Group 3 Missing		1	9	No	No	1.0.1.2.1.102
175	Slot 1	PV-CQ16	12/31/1969 10:44:02 PM	DMB 2 Audio Group 4 Missing		1	9	No	Yes	1.0.1.2.1.103
174	Slot 1	PV-CQ16	12/31/1969 10:44:02 PM	DMB 2 Audio Group 3 Missing		1	9	No	Yes	1.0.1.2.1.102
173	Slot 1	PV-CQ16	12/31/1969 10:44:01 PM	DMB 2 Audio Group 3 Missing		1	8	No	No	1.0.1.2.1.102
172	Slot 1	PV-CQ16	12/31/1969 10:44:01 PM	DMB 2 Audio Group 4 Missing		1	8	No	No	1.0.1.2.1.103
171	Slot 1	PV-CQ16	12/31/1969 10:43:56 PM	DMB 1 Audio Group 3 Missing		1	5	No	No	1.0.1.2.1.82
170	Slot 1	PV-CQ16	12/31/1969 10:43:56 PM	DMB 1 Audio Group 4 Missing		1	5	No	No	1.0.1.2.1.83

Figure 81: Fault Log Contents

System Fault Descriptions

The following are possible system faults:

- Back Module Power Failure
- CrossPoint Power
- Fan <number> Failure
- Power Supply <number> failure
- Module <number> alarm

Configuration Dashboard

Click the **Configure System** link in the toolbar at the top to start configuring your Platinum VX system.

The Configuration Dashboard is then displayed. You can do the following:

Database Foundry (on page 135)	Work with Sources and Destinations in the Database
Firmware Foundry (on page 146)	Apply Firmware Upgrades
User Foundry (on page 149)	Manager User Accounts and Passwords.
Manage Controller Settings (on page 134)	Manage Controller Settings

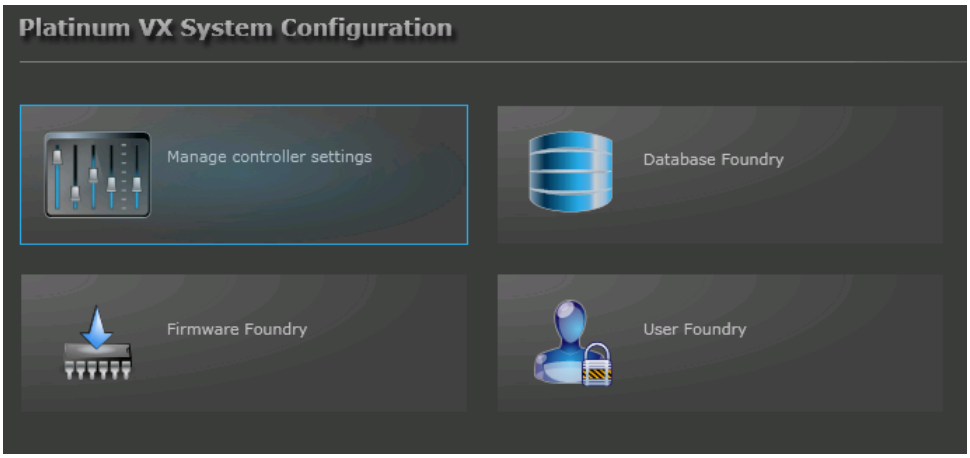
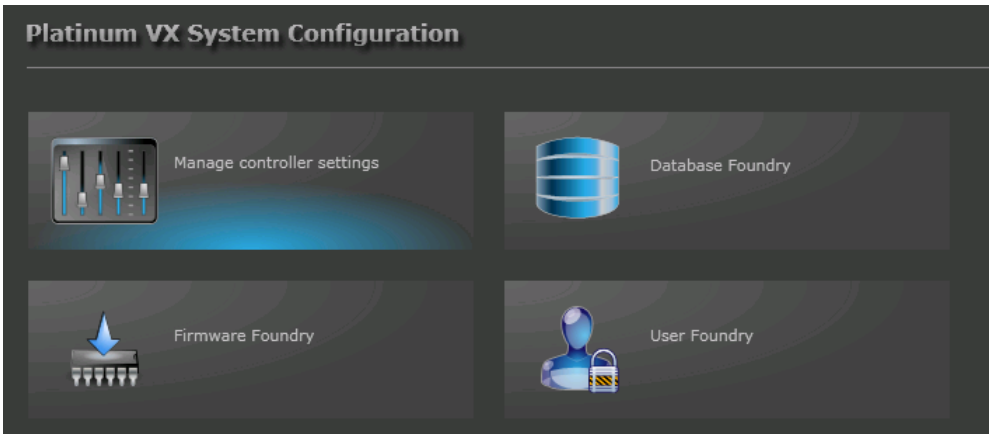


Figure 82: Platinum VX Configuration Dashboard

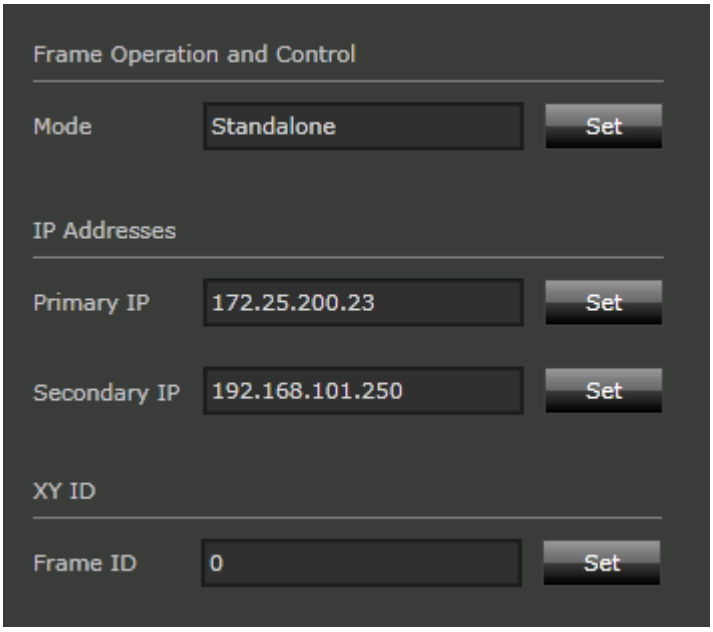
Manage Controller Settings

Controller Settings are accessible via the **System Configuration** dashboard.



The following settings can be defined here:

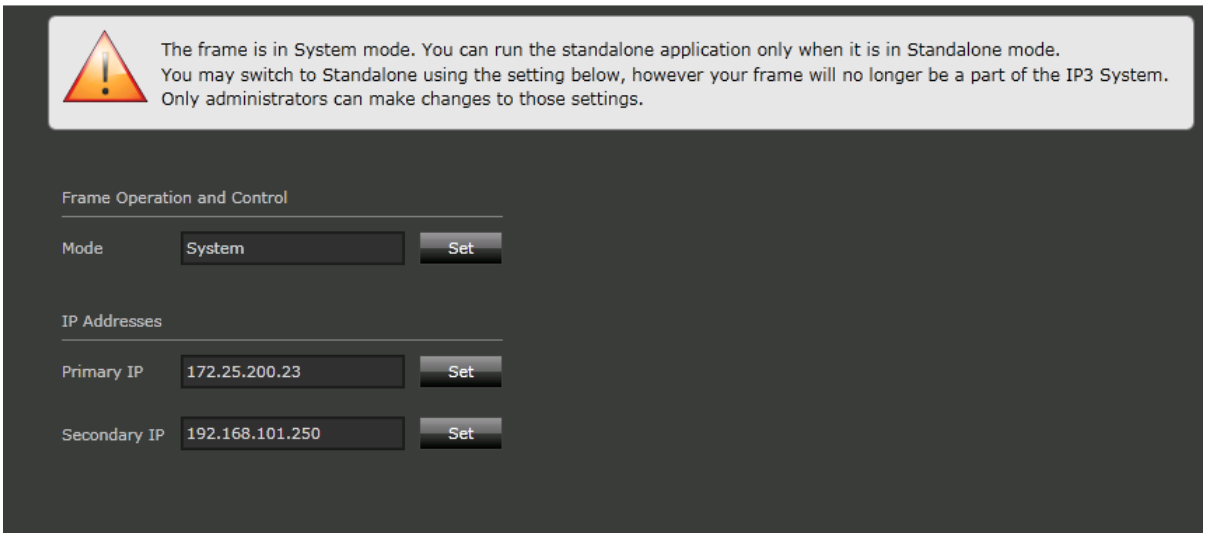
- **Mode:** The operation mode. Click **Set** to change. Options are **Standalone** or **System**. Ensure Standalone is selected for the first release of the Platinum VX. See System Frame Control Mode (on page 135) for more details on that option.
- **Primary IP:** The Primary IP Address.
- **Secondary IP:** The Secondary IP Address.
- **Frame ID:** The Frame ID



System Frame Control Mode

The System Frame Control Mode is available via the UI but not supported for the first release of the Platinum VX. It will be supported in later versions and is intended for use when you want your Platinum VX frame to be controlled using a Platinum IP3 Controller. The Standalone version should be used when using the first release of the Platinum VX.

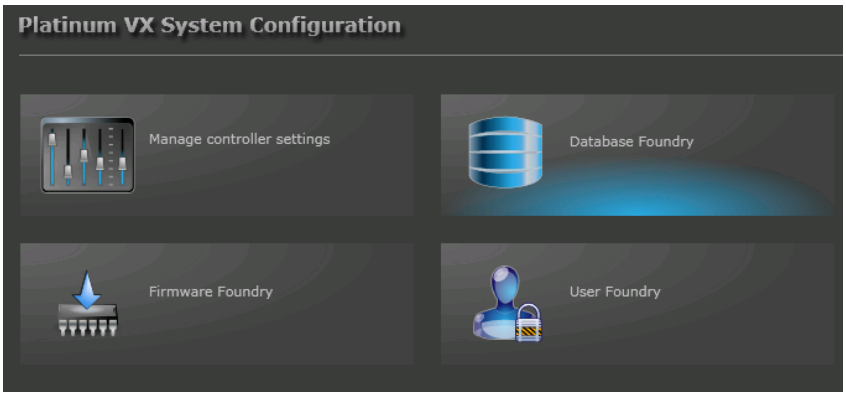
When you set the Frame Control Mode to System, the system prompts you to refresh the browser and you see the following screen indicating that the system is in System mode and cannot be accessed via the Platinum VX web interface. It will be accessible if you switch to Standalone mode, but then the frame will not be controllable by the IP3.


The frame is in System mode. You can run the standalone application only when it is in Standalone mode.
You may switch to Standalone using the setting below, however your frame will no longer be a part of the IP3 System.
Only administrators can make changes to those settings.
Frame Operation and Control
Mode
System
Set
IP Addresses
Primary IP
172.25.200.23
Set
Secondary IP
192.168.101.250
Set

Note: Only Administrators have the option to switch from System mode to Standalone mode.
If an Operator logs in, the button (Set) to switch modes is grayed out.

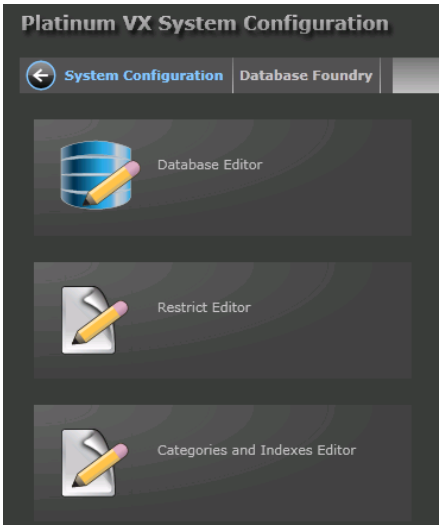
Database Foundry

The **Firmware Foundry** is accessible via the S**ystem Configuration** dashboard.



The Database Foundry contains various Database Editors to create a Database Matrix Definition System for **Platinum VX.**

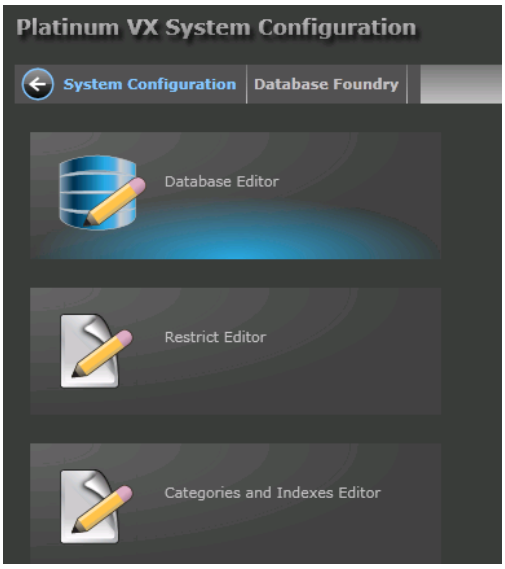
- Database Editor (on page 136)
- Restrict Editor (on page 142)
- Categories and Index Editor (on page 145)



Note that the Platinum VX does not currently support a multi-level configuration.

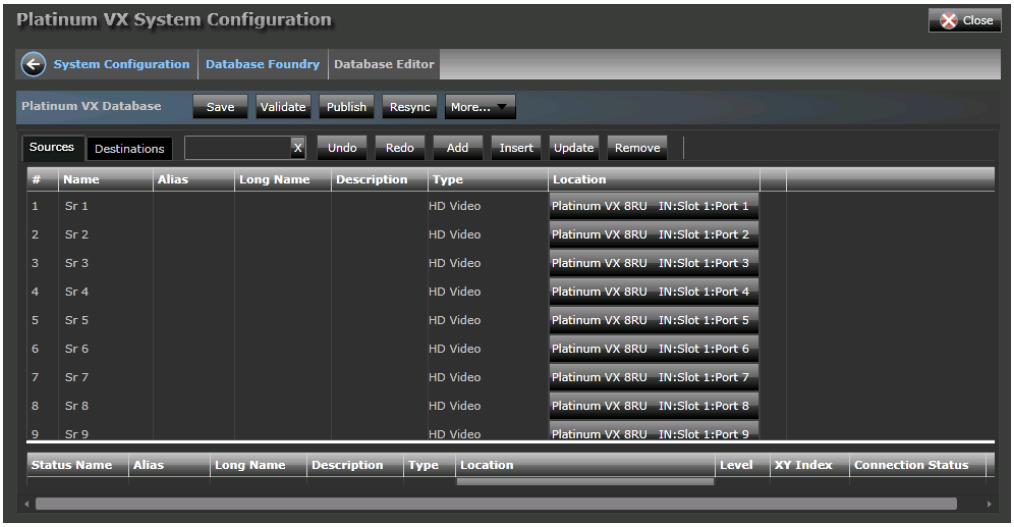
Database Editor

Click the **Database Editor** button in the **Database Foundry** view to access the Database Editor.



The first time you access the Database Editor, a database is auto-generated depending on the size of the frame detected (1/2/4/8).

The Database Editor interface enables you to define sources and destinations and perform actions on them. Ensure you're in the required tab (**Sources** or **Destinations**) for instance, if you want to add Sources, ensure you're in the **Sources** tab.


Platinum VX System Configuration
Close
System Configuration
Database Foundry
Database Editor
Platinum VX Database
Save
Validate
Publish
Resync
More...
Sources
Destinations
Undo
Redo
Add
Insert
Update
Remove
Name Alias Long Name Description Type Location
1 Sr 1 HD Video Platinum VX 8RU IN:Slot 1:Port 1
2 Sr 2 HD Video Platinum VX 8RU IN:Slot 1:Port 2
3 Sr 3 HD Video Platinum VX 8RU IN:Slot 1:Port 3
4 Sr 4 HD Video Platinum VX 8RU IN:Slot 1:Port 4
5 Sr 5 HD Video Platinum VX 8RU IN:Slot 1:Port 5
6 Sr 6 HD Video Platinum VX 8RU IN:Slot 1:Port 6
7 Sr 7 HD Video Platinum VX 8RU IN:Slot 1:Port 7
8 Sr 8 HD Video Platinum VX 8RU IN:Slot 1:Port 8
9 Sr 9 HD Video Platinum VX 8RU IN:Slot 1:Port 9
Status Name Alias Long Name Description Type Location Level XY Index Connection Status

You can perform a variety of functions on sources and destinations including:

- Add
- Insert
- Update
- Undo/Redo
- Remove
- Save
- Validate
- Publish
- Resync
- Import
- Export
- Set Preferences

Add

Click the **Add** button to add a new source or destination.

- **Number**: The *number* of Sources or Destinations to create. By default, a single Source/Destination will be created. If a greater number is entered here, for example 10, 10 sequential sources or destinations will be created, incrementally named (based on the Name Prefix) and with the same details.
- **Use Name Index**: Select this option to use Name Indices. Unchecking this grays out the *Name Index* field.
- **Name Prefix**: Enter a name for the Source or Destination. By default, *Sr* or *Ds*. Limited to 8 characters.
- **Name Index**: Index of the Source/Destination.

- **Alias**: Alias for the Source/Destination.
- **Long Name**: Long Name for the Source/Destination. Opt to provide a longer more descriptive name than the character limited *Name*.
- **Description**: Description of the Source/Destination.
- **Device Type**: Preset to Video.

Video Starting Location

- **Frame**: The Frame that the Source/Destination is in
- **Location Type**: Whether Input (IN) or Output (OUT)
- **Slot**: The Slot in the Frame that the Source is in.
- **Port**: The Port for the Slot. Ports 1 to 24 available for selection
- **Channels**: Set to Video 1
- **Maximum number of Video Ports per module**: This affects how the sources/destinations are spread across the modules

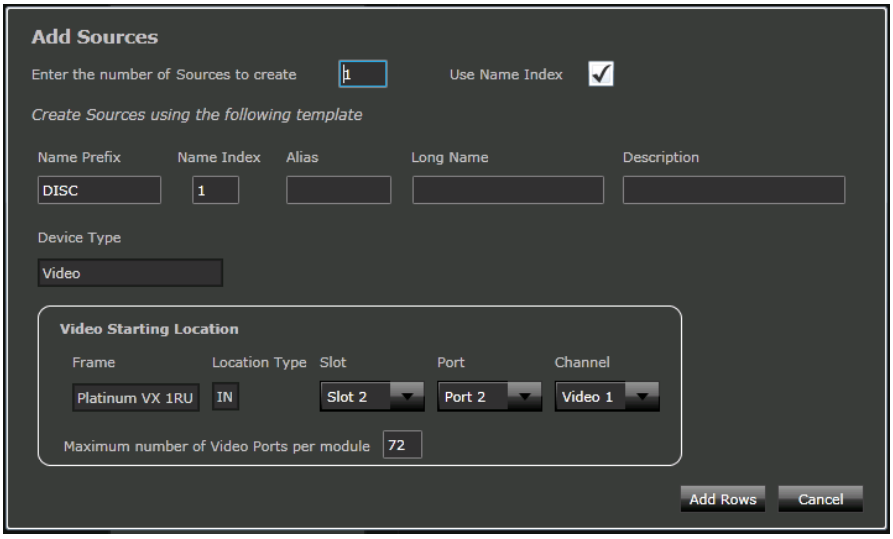


Figure 83: Database Editor - Add Function

Insert

The **Insert** option is identical to **Add** - the only difference is with **Insert**, you can choose *where* to add sources/destinations.

For example, if you previously defined Sr1-Sr5, and you want to add a new source right after Sr1 (rather than after Sr5), use the Insert option to do so. If you use Add in this case, Sr6 will be placed after Sr5.

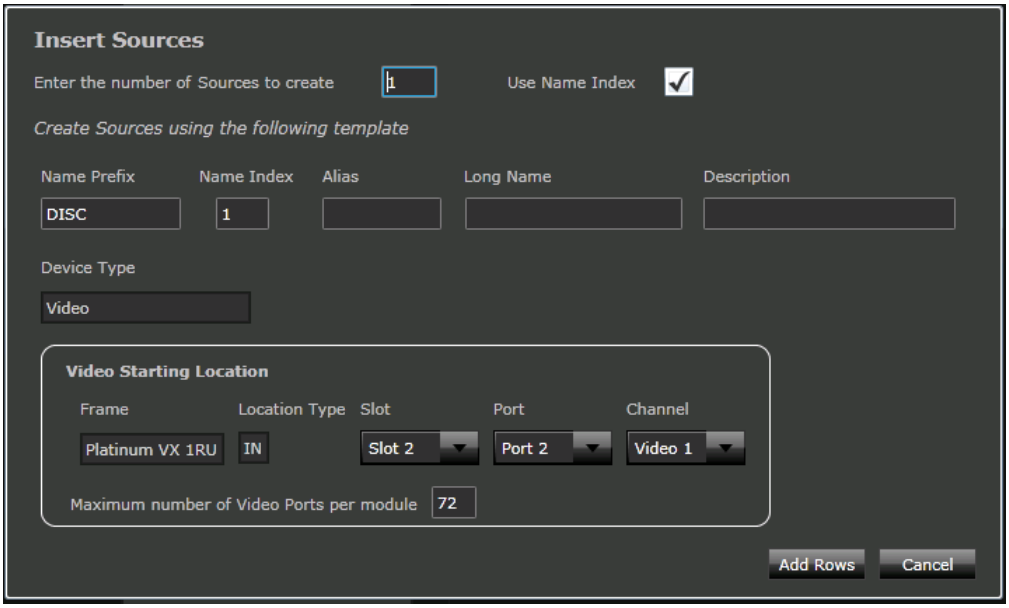


Figure 84: Database Editor - Insert option

Update

Use the **Update** option to modify details for a previously created Source or Destination. Select the appropriate checkbox to modify that section.

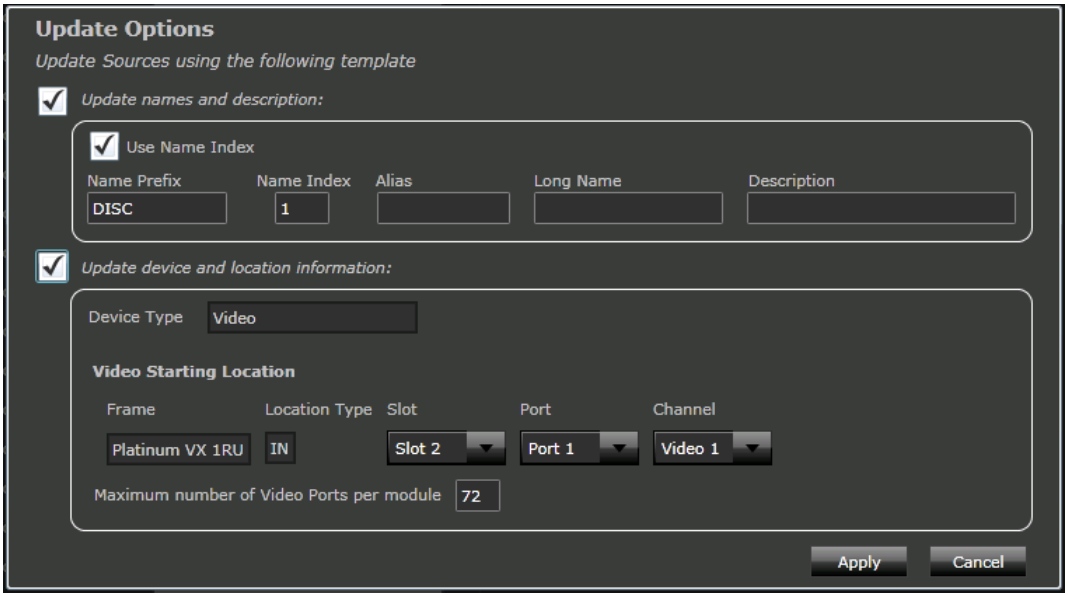
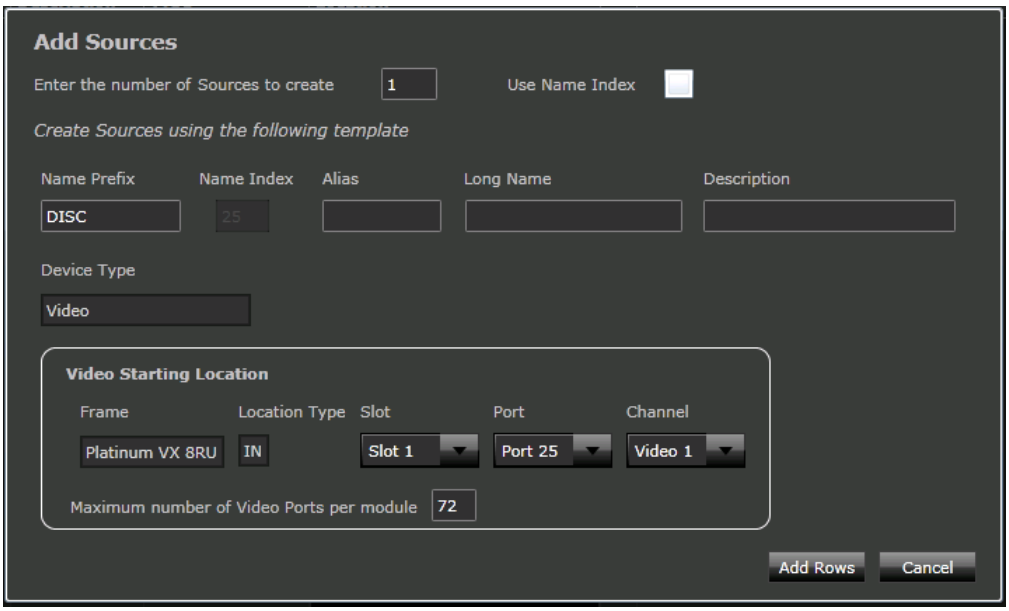


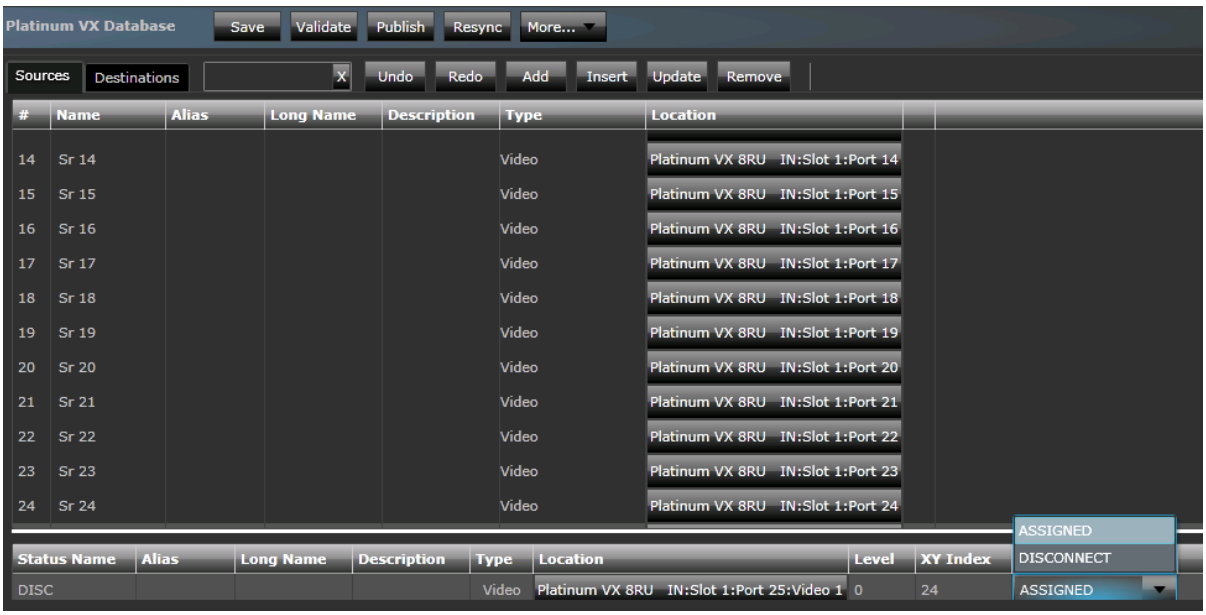
Figure 85: Database Editor - Update option

Disconnect

To create a disconnect source or destination, use the Add (on page 137) function to add the source or destination, uncheck the **Use Name Index** checkbox, and enter a descriptive name in the **Name Prefix** field so you can easily distinguish this as a Disconnect.



Once you create the source/destination, select it, and in the pane below, change the **Connection Status** from **Assigned** to **Disconnect**.


Platinum VX Database
Save
Validate
Publish
Resync
More...
Sources
Destinations
Undo
Redo
Add
Insert
Update
Remove
Name Alias Long Name Description Type Location
14 Sr 14 Video Platinum VX 8RU IN:Slot 1:Port 14
15 Sr 15 Video Platinum VX 8RU IN:Slot 1:Port 15
16 Sr 16 Video Platinum VX 8RU IN:Slot 1:Port 16
17 Sr 17 Video Platinum VX 8RU IN:Slot 1:Port 17
18 Sr 18 Video Platinum VX 8RU IN:Slot 1:Port 18
19 Sr 19 Video Platinum VX 8RU IN:Slot 1:Port 19
20 Sr 20 Video Platinum VX 8RU IN:Slot 1:Port 20
21 Sr 21 Video Platinum VX 8RU IN:Slot 1:Port 21
22 Sr 22 Video Platinum VX 8RU IN:Slot 1:Port 22
23 Sr 23 Video Platinum VX 8RU IN:Slot 1:Port 23
24 Sr 24 Video Platinum VX 8RU IN:Slot 1:Port 24
Status Name Alias Long Name Description Type Location Level XY Index
DISC Video Platinum VX 8RU IN:Slot 1:Port 25:Video 1 0 24
ASSIGNED
DISCONNECT
ASSIGNED

Undo/Redo

Undo or Redo the last option.

Remove

Select one or more Sources/Destinations and click **Remove** to delete them.

Save

Click to **Save** changes.

Validate

Click to **Validate** sources/destinations added. If any of the sources/destinations do not validate properly, you will see an icon beside them that you can click on to see the validation details.

Publish

Click to Publish changes to the database.

Resync

Click to resynchronize all XY indices across the source or destination.

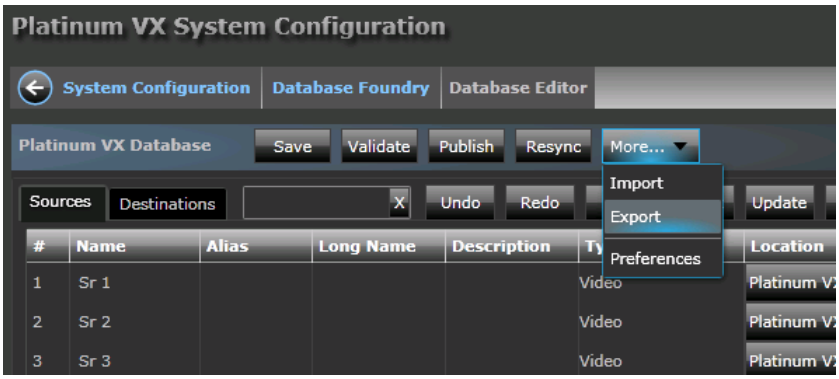
Import and Export

The Platinum VX database can be exported to/imported from another Platinum VX router, allowing for the database to be reused on a different Platinum VX router. Using the **Export** function in the Database Editor, you can export the Database from one Platinum VX router, and use the **Import** function to import it to another Platinum VX router.

Note that you can only export from a Platinum VX router to a Platinum VX router; you cannot import a Platinum VX database to another router, for example, Platinum IP3. You can however import/export across different Platinum VX frame variants. For example, you can export the database from a 2 RU frame and import it to an 8 RU frame.

To export the database:

1. In the Source Platinum VX router's Database Editor, click the **More** button and select **Export**



2. Enter a filename and select a location to export the database file to.

The database is exported in .pvx format and it contains the following files:
- CategoryIndex.xml
- DeviceMapping.xml
- DeviceTypes.xml
- LogicalDB.xml
- names.txt

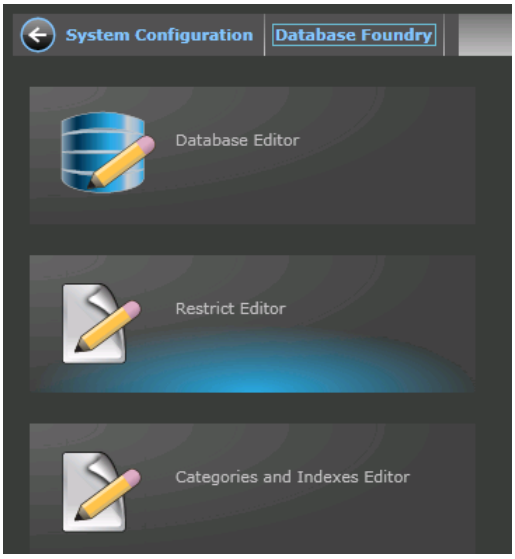
Note that you cannot see these files directly; to do so, rename the exported .pvx to zip and then extract the files.

To import a database:

1. In the target Platinum VX router's Database Editor, click the **More** button and select **Import**
2. Select a valid .pvx file that was created by exporting the Database from a Platinum VX router

Restrict Editor

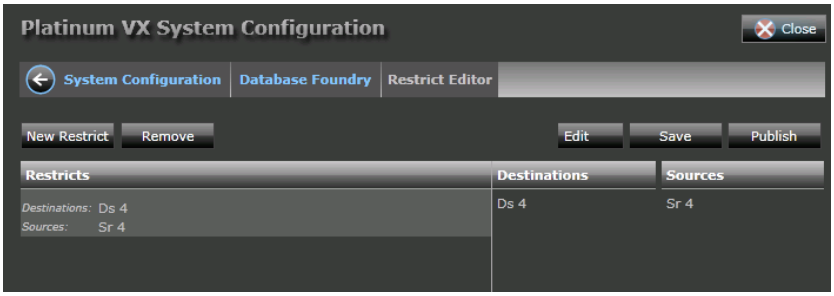
Click the **Restrict Editor** button in the **Database Foundry** view to access the Restrict Editor.



The Restrict Editor enables you to restrict routing of selected logical sources to logical destinations. These restrictions are used to enforce business policy and reduce operator errors. Source Restrict definitions are in sets; you can define one or more source restrict sets, and each set consists of a list of one or more logical sources restricted from being routed to a list of one or more logical destinations. You can define as many source restrict sets as required.

The database must be defined before any source restrict definitions, because Source Restricts apply to the existing logical database.

The editor displays existing source restrict sets on the left, and the content of the currently selected restrict set on the right. You can remove or edit an existing restrict set, or create a new one.



Rules when creating Restrict Sets

The following rules apply when creating a new restrict set:

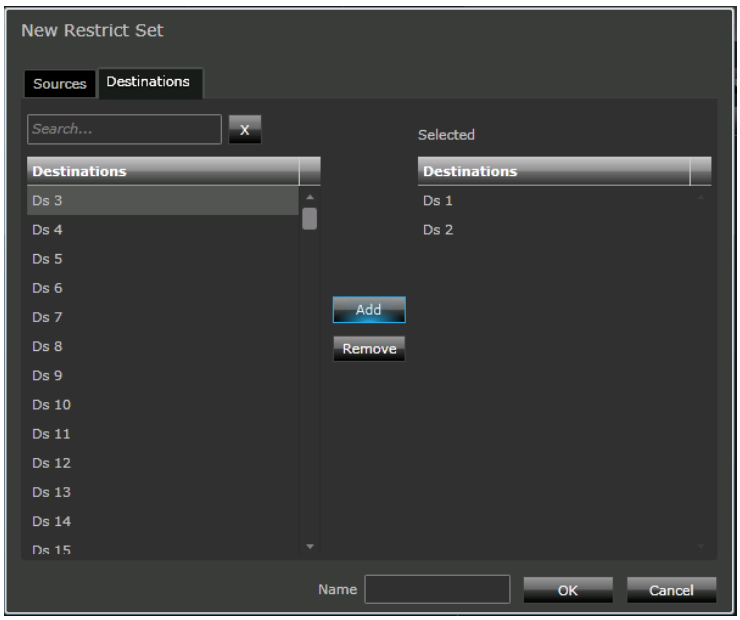
- The relation between destinations and sources defined in a restrict set is "**Any of**".

  For example, **any of** the sources included into the restrict set cannot be routed to **any of** the destinations included in that restrict set.
- Restrict sets can be defined in any of the following formats:
  - One source to many destinations
  - Many sources to one destination
  - Many sources to many destinations

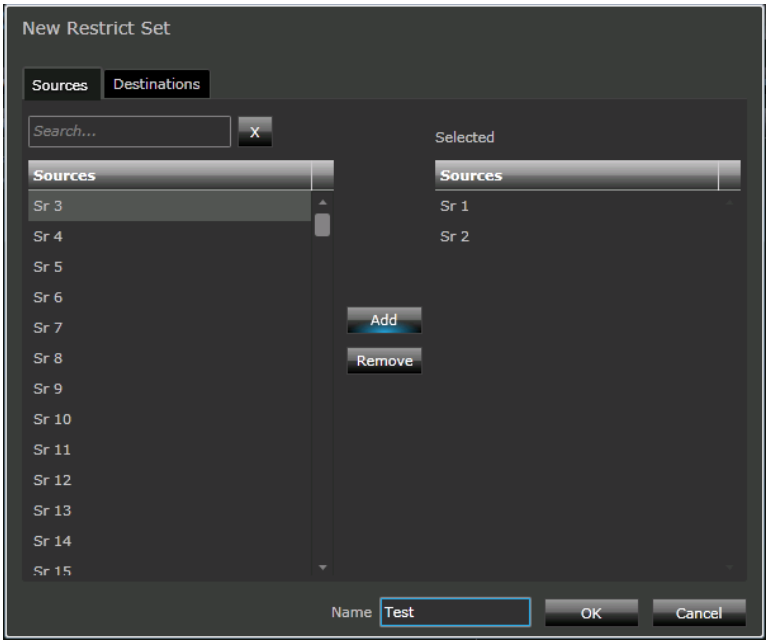
The same source/destination can be used in multiple restriction sets.

Creating a new Restrict Set

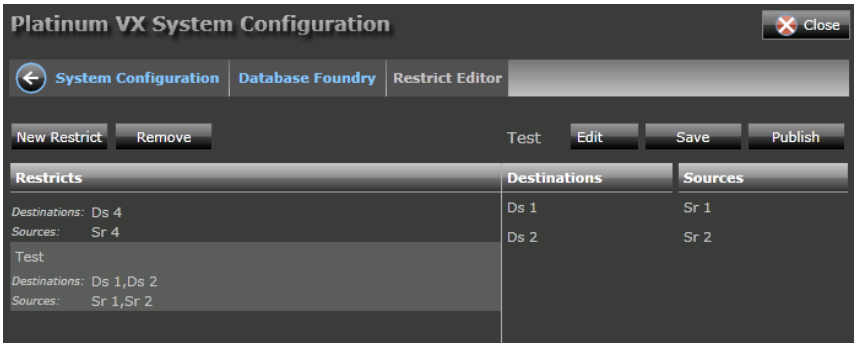
1. Click the **New Restrict** button. The **New Restrict Set** dialog is displayed.
2. In the **Destinations** tab, define the list of logical destinations that the restrict set applies to by selecting from the available logical destinations (in the database) and clicking **Add**.



3. In the **Sources** tab, define the list of logical sources that you want to restrict from being routed to each destination defined in the previous step by selecting from the available logical sources (in the database) and clicking **Add**.



4. Optionally, name the restrict set (at the bottom of the screen) and click **OK**.
Once the dialog closes the new restrict set will appear in the list of restrict sets.



5. Click the **Save** button to save changes, and then click **Publish**.

Categories and Index Editor

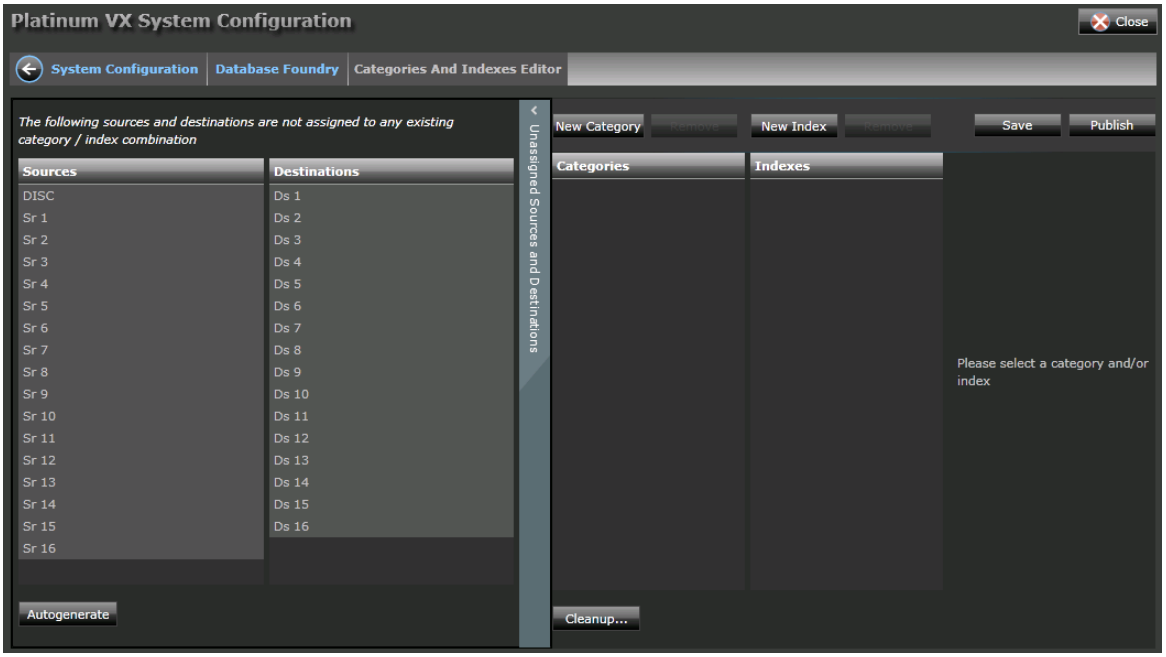
Click the **Categories and Indexes Editor** button in the **Database Foundry** view to access the Categories and Indexes Editor.

Categories are a navigational tool that help you find specific ports on a large router. Indexes are the characters assigned to a category. Category indexing is the primary method of selecting sources and destinations on hardware control panels used to control a Router. With category indexing, both a category (for example, VTR, CAM, etc.) and an index (21, 2, 36, etc.) are required to identify a device. The first click of a button selects the category; the second click selects the index.

For example, you may have a category called CAM, and within that you have four cameras with index labels 1, 2, 3, and 4. In order to select the destination or source on a control panel, you would first click CAM, and the options would then refresh to offer you 1,2,3,4.

This method of category indexing allows many sources to be accessed from a single panel without the need for hundreds of selection buttons. A Broadcast Center, for example, could contain twenty monitors, each of which could be accessed using the one button labeled “MON” followed by the appropriate index number. Similarly, each of twenty cameras could be selected using only one button labeled “CAM” followed by the appropriate index number.

Using the Categories and Index Editor



Sources and Destinations are displayed on the left. You have the following options:

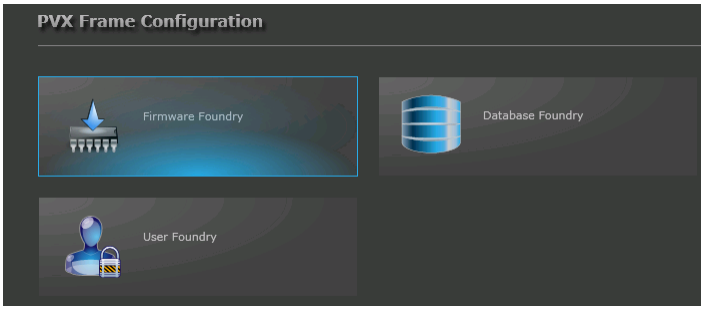
- **Autogenerate**: Click the Autogenerate button to generate categories and indexes for all sources and destinations. This is the easiest way to do it, and you can then edit or tweak as required.

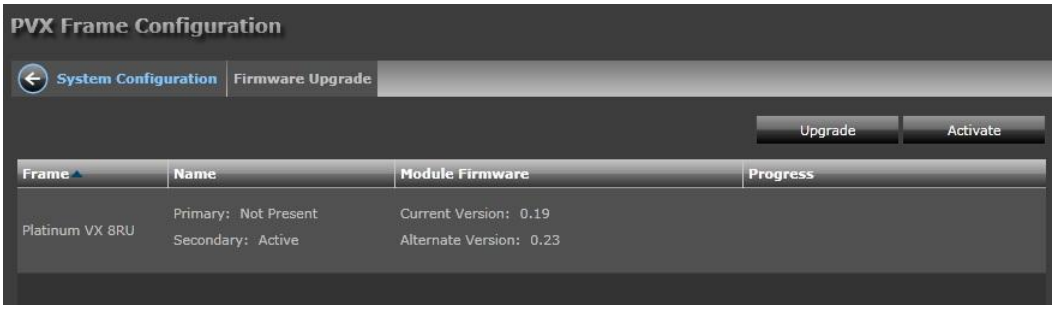
- **Create New Category and Index:** Click the **New Category** button and give the Category a name; then click the **New Index** button and enter an index.

Click **Save** when done, and then click the **Publish** button to publish changes to the database.

Firmware Foundry

The **Firmware Foundry** is accessible via the S**ystem Configuration** dashboard.

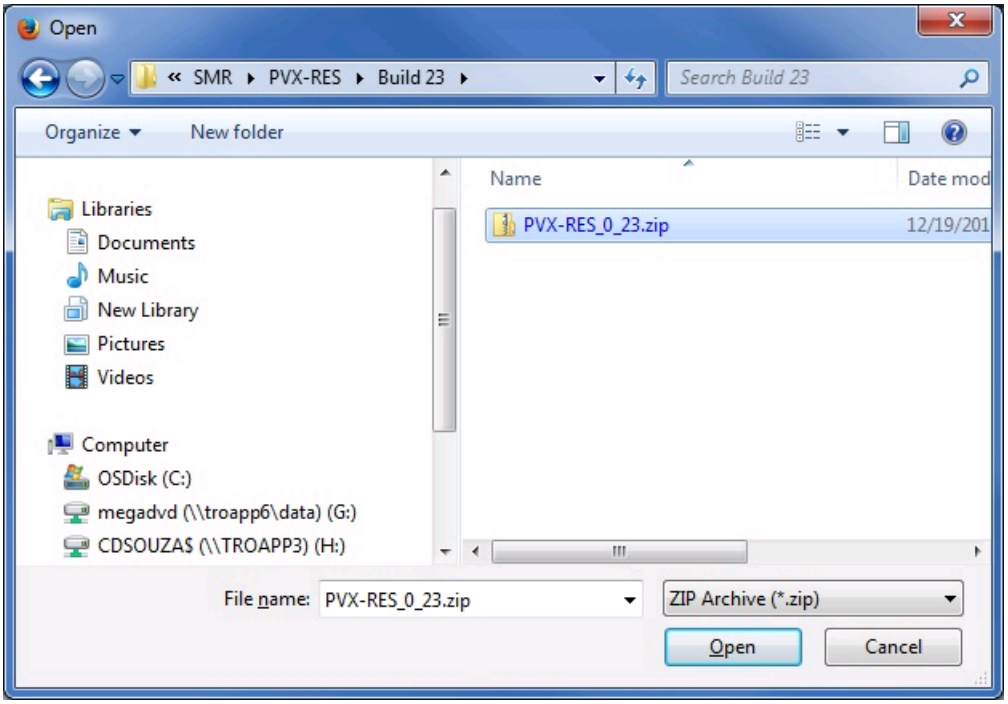




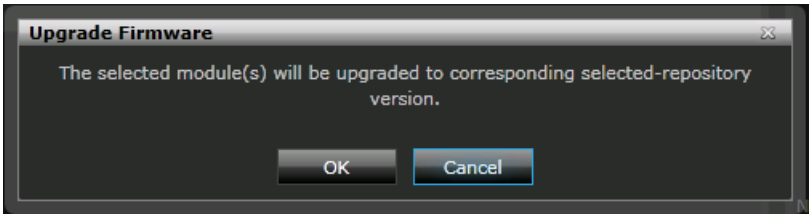
To upgrade the firmware:

1. Click the **Upgrade** button

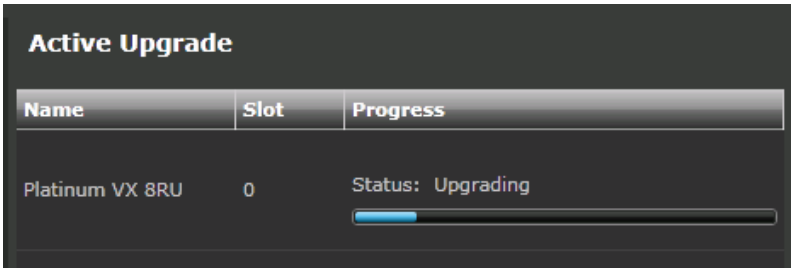
2. Browse and select the firmware package. Click **Open**.



3. You will get a message confirming the upgrade.

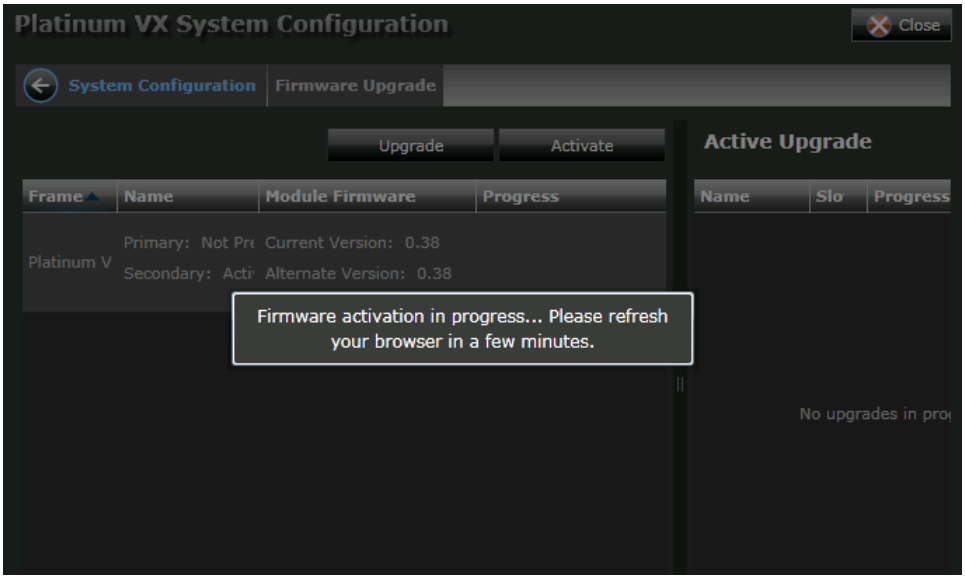


4. Upgrade progress will be displayed on the right



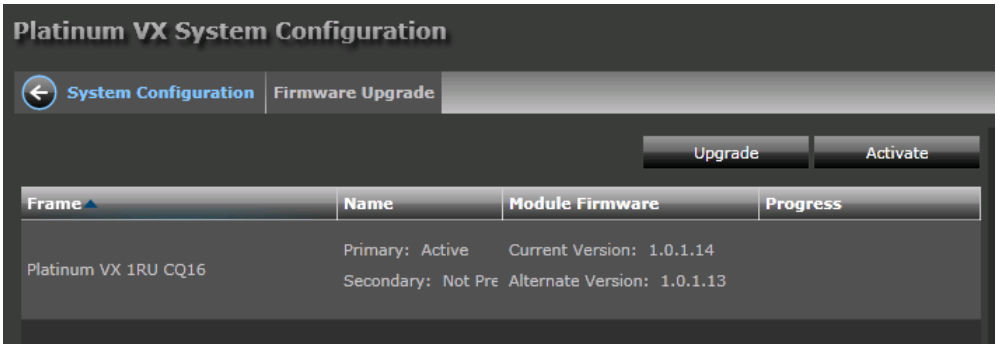
5. Click the Activate button to activate the new firmware

6. A message will be displayed confirming that firmware activation is in progress. Refresh your browser after a while.



Upgrading the CQS Module

The CQS Module is not upgraded separately, but is upgraded via the PVX-RES Resource Module firmware that is applied to the frame.



User Foundry

The **User Foundry** is accessible via the S**ystem Configuration** dashboard, and is used to manage user accounts and passwords.

The Platinum VX application ships with two access accounts:

Administrator Account

This account has full access rights. Some of the key Administrator privileges include:

- Managing Operator and Administrator Passwords
- Software Upgrades

Operator Account

This account has the following privileges:

- Frame Control
- Control of Input/Output parameters

Changing the Administrator/Operator Password

To change either of the passwords, click the **Change Password** link and enter a new password.